HARVARD BUSINESS REVIEW

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VOLUME I NUMBER 3 APRIL 1923 PRICE $1.25 A COPY

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APRIL
1923

VOLUME I
NUMBER 3

THE FEDERAL RESERVE BANKS AND THE OPEN MARKET FOR ACCEPTANCES

By PAUL M. WARBURG

IN the face of failure or misfortune, there is small comfort in being able to say, "I told you so"—or Cassandra would have been a happier woman than history tells us she was. The creation of the Federal Reserve System no doubt has proved one of the greatest achievements ever accomplished by Congress, but where it fell short, and in recent years became the target of unfairly severe criticism, the Federal Reserve System was largely the victim of some organic defects which were clearly foreseen at the time of its creation. Before the Federal Reserve Act was passed, its writers were warned that by the creation of twelve autonomous Federal Reserve Banks, decentralization would be carried too far. In looking over an article which I wrote in 1913, I find I clearly predicted that "with twelve competing centers with twelve conceivably different discount policies, a large discount market cannot develop. . . . . In order to avoid the semblance of a central bank, the structure has been torn into twelve separate entities; but as the majority of these units are unable to stand alone, and as safety lies in union only, there must be some arbitrary power to take the place of the organic links that are missing in the structure. The further decentralization has gone, where centralization is the end to be sought, the vaster and the more arbitrary those powers must be. With twelve units, for the deliberation and cooperation of which with one another the law does not contain any provision, the initiative and executive power for any joint or individual action between these Federal Reserve Banks must rest solely with the Federal Reserve Board," and "For these seven outsiders, who constitute the Federal Reserve Board—outsiders because, living in Washington, they all stand outside of active business and cannot possibly ever be in direct touch with the same"—it was prophesied that it would be a well-nigh impossible task to mould the operations of twelve dis-

connected autonomous Federal Reserve Banks into one effective discount policy sustained by a country-wide discount market. "For the sake of creating some provincial centers, which will be centers only in name, and which, standing alone, will not be able to provide the needed relief, the efficiency of the whole system will have been sacrificed. Important open discount markets will not develop."

These predictions, unfortunately, proved true, even though some of the weaknesses then pointed out were eliminated before the law was enacted, and others have since been counteracted by subsequent amendments or methods of administration. The gold clearing fund, later devised and authorized by Congress, made an organic unit of the entire system, and the inauguration of conferences between governors and Federal agents, and the establishment of regular inter-Federal Reserve Bank committees, brought about a measure of uniformity of methods and a closer cooperation without which the system could never have been developed to its present degree of perfection and efficiency.

The fundamental weakness, however, remained unchanged: Twelve independent, autonomous Federal Reserve Banks, some of which were single commodity districts, and entirely too small, offered an almost insurmountable difficulty in the way of the establishment of a well-devised and efficient discount policy entrusted to a Federal Reserve Board sitting in solitary confinement at Washington. Small districts make for small men, and it is safe to assume that some of the administrative measures which created unnecessary irritation and bitterness in certain agricultural districts might not have happened if there had been larger units, containing more diversified industries. If the Board had to direct a smaller number of larger and more composite districts with men with larger responsibilities in charge of them, and if these larger groups of districts had been given some direct representation on the Board (as had been urged), it would have been easier for the Board to secure a comprehensive and at the same time intimate picture of the problem upon which to base its re-discount and open market policies, and it would have had a simpler and more responsive instrument by which to carry such policies into effect.

The champions of an excessive number of Federal Reserve districts contended that there was no weight to the charge that a system of twelve competing centers would defeat the very end of the law in so far as, by the creation of a number of important independent discount markets, it was designed to break down New York's overwhelming importance as a money center. From the point of view of pure theory and technique, the most economical and efficient marketing organization is attained when all buyers and sellers meet in one market. If, for reasons of our own, we preferred several centers, it was conceivable that sufficient concentration of business might still be secured if we did not attempt the creation of too many markets. It is obvious, however, that if decentralization were pushed to the extreme of establishing a center in every village of the United States, the inevitable consequence would be that no important outside markets would develop. A central banking system constructed on the theory of several cooperating central organizations can be expected to function with full success only if decentralization is not carried to such a degree as to deprive the single units of the character of impor-

tant concentration points serving large districts with a wide circle of sellers and buyers. To illustrate: If St. Louis had been permitted to become the Federal Reserve Bank of the Southwest, with branches at the points of importance, we might have hoped to see it develop into a money and discount market of real strength and wide scope. As it is, neither St. Louis, nor Atlanta, nor Dallas, nor Kansas City has become a money market in the wider sense of the term. The Federal Reserve banks in these cities are essentially re-discounting counters, and this function could have been exercised by branches as well as by independent banks. The Northwest has been cut up in a similar manner, thus hampering Chicago's opportunities of building up a substantial discount market of her own. In the face of these organic obstacles, it is small wonder that up to now it has not been possible to develop a country-wide discount market. In this respect, the system so far has resulted in blocking effective centralization without making decentralization successful. If the Federal Reserve System is to be considered as nothing more than an emergency organization, it could be expected to function properly with twelve re-discounting points. If it is designed to be more than that, if it is to act as equalizer and stabilizer every day of the year alike, in good times as well as in periods of adversity, it must be able freely to develop its open market operations and that, in turn, is predicated upon the existence of a countrywide discount market. For the rank and file of friendly or antagonistic students of the problem the re-discount operations are the heart of the Federal Reserve System. But the heart does not function without the lungs, and as these, we must consider the open market operations. Without a properly adjusted functioning of both, a healthy Federal Reserve System cannot exist.

In guiding the development of American acceptance banking and of the discount market, the Federal Reserve Board and the leading Federal Reserve Banks have accomplished extraordinarily good results in spite of very adverse circumstances. For, in addition to the organic obstacles already described, progress, in opening the avenues for a country-wide distribution of bankers' acceptances, has been impeded by other difficulties—just as trying, though not of a fundamental character—such as the consistent absorption by the Treasury of funds seeking fluid short-term investment.

Entrance of Federal Reserve Banks into Open Market

Until the supply of short-term U. S. Treasury Notes and Certificates, with their tax-exempt features, is substantially reduced, the development of the open market for both bankers' and trade acceptances will have an uphill fight. As a matter of plain logic, the present rate for bankers' acceptances of about 4 to 4⅛% would seem too high as compared with the open market rate for commercial paper of about 4½ to 4¾%; for the charge of even the most modest acceptance commission would bring the cost of an acceptance credit to our strongest houses above that of borrowing on their single-name notes.[1] Our acceptance rate looks high also when compared with the British rate of about 2½%, with which we have to compete in world markets, even though the fluctuations of Sterling exchange

[1] For giving their acceptances banks charge commissions at the rate of 1 to 2% per annum, according to the credit risks involved in each case (i. e., ¼% to ½% per 90 days).

and the premium to be paid on forward Sterling for cover at maturity add substantially to the cost of the use of Sterling credits. Assuming that the demand for commercial credit is not intensive enough at this time to warrant the expectation of a substantial hardening of the market rates for single-name paper, the alternative, in order to cure these anomalous conditions, would be a lowering of the open market rate for bankers' acceptances. It would be an easy and perfectly practicable matter for Federal Reserve Banks to reduce the rate at which they purchase bankers' acceptances to well below 4%. But if they went too far in that direction they would have to fear the effect on the open market; for important banks might then be tempted to neglect the purchase of acceptances even more than they do to-day. In other words, the so-called open market would become still further narrowed, and the Federal Reserve Banks might become almost the only buyers. In such a case the result might be an increase in their holdings of acceptances, and a reduction in their holdings of Government securities, while, conversely, the banks might reduce their acceptance holdings and increase their holdings in Government securities. This dilemma will continue to exist as long as the Treasury must raise billions on short-term borrowings, and as long as tax-exempt Treasury Certificates must, therefore, compete with bankers' acceptances as the classic investment for liquid banking funds. Add to this the problem of the daily settlement dealings on the New York Stock Exchange, and their unhappy effect on the development of a free discount market, and the conclusion seems inevitable that for the next years to come the progress of acceptance banking in the United States is likely to labor under a very severe handicap. In spite of these conditions —the seriousness of which it would be foolish to deny—it should not be impossible to secure progress if we can succeed in enlisting the interest of our large banks and if we can make them understand the deep significance of this problem with regard to the proper and effective functioning of the entire Federal Reserve System.

Relation of Open Market Operations to Federal Reserve Bank Policy

Is the Federal Reserve System an active or a passive organ? Is it the hammer that hits or the anvil that stands waiting to receive the blow? I wonder how many of all the members of Congress that have discussed or denounced the Federal Reserve System in recent months would be able to give a quick and fairly matured and intelligent reply to that question. Indeed, I am not over-confident that an excessively large number of business men or bankers would be prepared, offhand, to give a satisfactory response. Some would probably assert that the System should always be hammer; others, that it should generally be anvil; and the most thoughtful would say that it is hammer or anvil, according to the strategic position of its discount rates in their relation to the interest rates ruling in the open markets of the country. The latter thesis would sound fairly convincing; but what would they answer if asked to define more clearly what this "strategic position" should be? It may be assumed that they would reply that the discount rates should be high enough to make re-discounting for profit unattractive, and low enough not to make it prohibitive. That, too, would sound well; but can anybody say that—with an open market rate for single-name commercial paper of, let us say,

5%—a Federal Reserve re-discount rate of 5% would be prohibitive for a $25,000 country bank charging from 7 to 10%? Indeed, for some of them a re-discount rate of 5% might in that case still offer a very real inducement for re-discounting for the sake of making a profitable turn, while, on the other hand, conceivably, such a bank rate might prove to be "strategically" well chosen with regard to dealings with strong banks in large centers. Conversely, if the Federal Reserve rate were raised to a point where it would have a safe and proper relation to the rates charged by some small country banks, it would become entirely prohibitive for the large financial institutions.

Uniform Federal Reserve re-discount rates are, therefore, always likely to act as hammer at one end and as anvil at the other, and the more heterogeneous the elements comprised in a Federal Reserve district, the more acute that difficulty will be.

The "strategic position" alone does not, therefore, appear to furnish a convincing answer. Some students may suggest, however, that the Federal Reserve System is hammer or anvil according to whether its discount rates are effective or ineffective, active or inactive. That sounds plausible enough; but what does it mean? I assume we are to understand that re-discount rates are to be considered as active—and, therefore, evidences of a hammer policy—when the Federal Reserve Banks show a substantial volume of individual re-discount transactions, or when the combined operations of the Federal Reserve Banks show a marked increase or decrease in the total of bills discounted. But such an assumption would be wholly fallacious.

We might have perfectly stationary Federal Reserve rates with substantial liquidation of Federal Reserve assets in one district offsetting substantial expansion in another. Thus, we might witness a large volume of individual re-discounting transactions during a period of "anvil policy." Indeed, in times when, generally, money rates would harden, the Federal Reserve System might show a very large increase in its holdings just because it might have pursued an "anvil policy," leaving its own rates unchanged when market rates might have advanced. Conversely, by moving up its rates energetically, the Federal Reserve System might keep its investments stationary and prevent expansion. In other words, we might witness a "hammer policy" with the aggregate of re-discounts unchanged, and an "anvil policy" with investments rising or falling. Active or inactive rates, judged by the single test of volume of business, may, therefore, not be considered as true evidences of a "hammer" or "anvil policy" of the Federal Reserve System.

It would be amusing to continue this question-and-answer game; but we have pursued it far enough to attack our problem from another angle. The Federal Reserve System, if properly exercising the function for which it was designed, should act as a guide and stabilizer of the interest-rate policy of the country. It is true that when things take a natural and healthy course the pilots of the Federal Reserve System, like good physicians, would doubtless hold that little or no active interference would be the wisest method. That, however, would not modify the view that to act as guide and regulator should be essentially a hammer and not an anvil function.

But a country doctor, forced to leave one single prescription to serve for months to come as the sole remedy for

an entire family, from the old grandfather down to the baby, would not be faced with a more difficult task than confronts the administrators of the Federal Reserve System when they are to determine one single re-discount rate to be applied at the same time to one-hundred-million-dollar concerns in large cities and twenty-five-thousand-dollar banks in small country towns. Our country doctor, in the case above described, could do no better than to leave the medicine on the table and rely on the common sense of his patients as to when to take it, and in what doses, no matter whether one would have to use it against pneumonia, another against measles or indigestion, and a third against the sufferings of old age. The medicine could not be improved for the benefit of one for fear of doing greater harm to the other. This analogy, extreme and ridiculous as it may appear, fits our case entirely and it leads us to the following conclusions: In a country with districts as heterogeneous as ours the automatic re-discount rate is a very unsatisfactory instrument—inadequate for the doctor, who gets out of touch with his patients, and dangerous in the hands of the patient to whose initiative and discretion its use is surrendered. The best result cannot be expected where the decision lies so overwhelmingly in the hands of those to be treated. It is true that the Federal Reserve Board might attempt to combat this weakness by seeking to guide the banks in the proper exercise of this initiative and discretion. With this end in view, it is urged that the Federal Reserve Board establish some simple principles for the guidance of the banks in the intelligent use of the re-discount facilities of the Federal Reserve Banks, bearing in mind, however, that for the large banks a different code of banking ethics must be laid down in this regard from that to be observed by the small ones. We shall revert to this phase of the problem a little later.

But even if the Federal Reserve Board should succeed in establishing such principles and in seeing them broadly accepted, the re-discount rate would remain a totally inadequate instrument to lean upon as the sole means of maintaining a reasonably close contact with the money market, or of exerting a fairly effective control of the general banking situation. If such contact and influence are to be assured, the Federal Reserve Banks must be able to rely on an additional and better medium, in the free use of which initiative and discretion rests entirely with them. This instrument lies in a carefully planned and free exercise of their power to carry on open market operations.

European Banks and the Open Market

Central banking is essentially a European art, which we have studied and adapted to our own particular needs. While we must beware of copying our teachers too slavishly, and without adequate consideration of the differences that exist between conditions here and abroad, it remains useful for us from time to time to re-examine the Old World's best banking standards and traditions, and to weigh how far it has become possible and desirable for us to make them our own.

Aside from the greater homogeneity prevailing in leading European countries, we know that they are served by a comparatively small number of huge branch-banking systems, and that bankers' acceptances and trade bills (to the exclusion of single-name paper) form the bulk of their portfolios. This makes for a more uniform and a more

closely knit rate fabric, one that a Central bank rate can fit more tightly and influence more easily than ours. The problems of single-name paper, of thousands of local miniature banklets, and of daily settlements on the Stock Exchange are foreign to these countries of the Old World, while with us they are the main roots of our difficulties.

As guiding stars for our small banks European banking traditions can, therefore, serve us little; they may give us important suggestions, however, when studying the problems of our larger financial institutions. For them it may be interesting to observe that the proudest British and French banks do not rediscount with their Central banks in normal times. The daily balancing between such banks and their Central banks is accomplished by the use of their available cash balances and through open market operations, which include loans to bill and money brokers, purchases or sales of acceptance or Treasury bills, etc.

The underlying idea of modern banking is that—barring extraordinary national or international demands—cash or deposit money withdrawn from one bank will turn up in another. In other words, if one bank loses, the other gains; and if funds are withdrawn from one city they turn up in another. Fluid funds seek liquid investments; one bank calls loans, the other seeks them; one bank collects its maturing bills, the other increases its holdings of acceptances; one liquidates Treasury bills, the other purchases them; and when this equalizing process is interrupted—because locally or nationally all banks are losing deposits at the same time—the Central bank will periodically increase its share in these liquid loans and investments while the banks of the country in the aggregate will have decreased their holdings.

A strong, proud bank in England or France would feel humiliated if in normal times it were forced to borrow directly from its Central bank, because, forsooth, it had not maintained a supply of liquid loans and investments large enough to meet by means of its balances and open-market operations any demands made upon it. In other words, normally the strongest banks in such countries would draw funds from the open market, either through calling loans or selling liquid assets from their portfolios. If, as a result of the operations of all the banks, the open market should become overloaded, *the market* would then resort to the Central bank, i. e., the bill brokers would sell acceptances to or borrow from note-issuing Central institutions. However, it would not have been the individual bank in that case that had taken recourse to the Central bank, but the market as a whole.

This is the highest standard of banking in normal times. Banks of smaller size, private firms, and the larger banks, in case of extraordinary strains, will send to the Central bank their short maturities, thus, when necessary, anticipating their collections by a few days. (In France and Germany this collection of maturing bills through the Central banks is carried on quite regularly even by the largest banks.)

I have gone into a hasty description of this phase of European banking because I believe an important lesson may be gathered from it for our own problems.

A Re-Discount Policy of Member Banks of the Federal Reserve System

During the War our banks were coaxed into subscribing liberally to our

Government bond issues, and to re-discounting freely with the Federal Reserve Banks. It was heralded as a bank's patriotic duty to overcome its hesitation to borrow from the Federal Reserve Bank. It must be admitted that it is a far cry from that viewpoint to the one I am now advocating: that the stronger a bank, the greater should be its reluctance to re-discount with a Federal Reserve Bank, unless it were justified by exceptional reasons.

The Federal Reserve System is not only a balance wheel for normal times; it is also an emergency organization for abnormal demands. Where it is a question of dealing with the latter it may be a public service and a duty to be rendered by the strongest banks to step in and lend their credit so as to ease or even save the situation by re-discounting with the Federal Reserve Bank. But what we are discussing is the policy to be pursued by our strong banks in normal times. If for their day-by-day transactions they could be persuaded to follow more closely the British procedure, they would be doing a wise and useful thing for themselves and a helpful thing for the entire country. For it is only through a country-wide free use of standardized paper, namely, prime bankers' acceptances, that genuine fluidity of money and credit of the highest type can be obtained. Only when we shall have a country-wide open discount market, absorbing the idle funds from one bank or section, in order to make them available for covering the shortage of another, shall we have a perfect banking system, one closely in touch with its Central organization and easily responding to its touch. For by increasing or decreasing its open market investments the Federal Reserve System can of its own initiative exercise a strong regulatory effect; it can exercise its hammer functions without violently jerking up and down ineffective re-discount rates, and it can accomplish this by comparatively small transactions. It must not be overlooked that when the Federal Reserve System increases or decreases its aggregate of investments it thereby expands, contracts, or re-establishes the reserves of the member banks. It exercises, therefore, a very far-reaching effect, because by its operations it may lengthen or shorten the reserve base which supports and controls the size of the inverted pyramid of bank loans that rests upon it.

The very description of the far-reaching influence of these operations leads to two inevitable conclusions: *First,* that in exercising their open market powers Federal Reserve Banks must not be moved by a desire to secure larger revenues, but that they must be actuated solely by the aim of having the Federal Reserve System act as a stabilizing balance wheel in the best possible manner; *second,* that these operations cannot be left to the discretion of each individual bank, but must be carried on under one joint and definite plan of action embracing all the Federal Reserve Banks. It is tempting further to explore this phase of the problem, but more than in the activities of the Federal Reserve System we are interested in the part to be played by the member banks. Returning to them, let me ask the question: Would it be imposing an undue burden upon our strong banks if they were to cooperate in developing the open market for bankers' acceptances in the manner we have discussed? I do not think so. The Federal Reserve Act reduced reserve requirements very substantially. If, from the reports to the Comptroller of the Currency of March 10, 1922, we take ten large na-

tional banks with aggregate net demand deposits of $1,946,478,555 and total time deposits of $102,040,388, we find that the required lawful reserve on that date, figured under the present law, amounted to $256,103,422. Under the law that existed prior to the enactment of the Federal Reserve law, as amended, the same institutions with the same aggregate deposits would have shown net deposits requiring reserves of $2,001,276,907, and the legal reserve required to be maintained actually in vault would have been $500,319,227. Thus we see a release of reserve aggregating approximately $250,000,000 for ten large banks selected at random. It would not seem, under these conditions, that it would be a very severe hardship if large, first-class institutions should adopt the policy of investing a fair proportion of their released reserves in bankers' and trade acceptances, and in loans on such paper to bill brokers—investments which, in world banking centers, are generally regarded as the equivalent of reserve—even though the return might be a little lower than might be obtained from single-name paper purchased, Stock Exchange loans, or other less liquid investments. The sacrifice involved would be very small, while by widening the open market, these banks would render an important service in perfecting the efficiency of the Federal Reserve System, which in the final analysis is the backbone of their own strength.

If the strongest of the first-class banks were to adopt as their ultimate code of banking ethics the ideal that the proudest amongst them normally would not re-discount with the Federal Reserve Banks except for special reasons; if the less powerful banks of that class were to aspire to re-discount normally with Federal Reserve Banks only their short maturities, this would result in leaving the re-discounting of the longer maturities almost exclusively the field for the small banks, and it would be primarily to meet their requirements and conditions that the ninety-day rediscount policy and that for the longer maturities would have to be determined. We should thus simplify our problem and bring it into a form where it could be properly understood, and where the adoption of an effective rate policy would offer much less complexity for the Federal Reserve System.

For the small banks we would lay down a very different code of ethics than for the large banks. Where to the latter we ventured to suggest that they use their re-discount facilities as sparingly as possible (perhaps, by rediscounting only the very short maturities), we would say to the small country banks: "Use your re-discount facilities unhesitatingly and freely in certain seasonal periods with these restrictions only: don't exceed a reasonable limit indicated by a safe proportion to your own resources; don't borrow all the year around; liquidate your re-discounts with the Federal Reserve System entirely, at least once every year, when the seasonal demand is over; for the Federal Reserve System is not designed to furnish you permanently with additional working capital, or—to put it another way—to permit you chronically to encroach upon your reserves by being a perpetual borrower from the System."

There are, then, two entirely different codes of ethics governing the relations of member banks to the Federal Reserve Banks; it would follow, as a matter of simple logic, that there should also be different rate policies. The present policy of trying to have one shoe fit them all: bankers' acceptances, trade

acceptances, fifteen-day and six-month paper practically all in one pot, seems to be the expression of an "anvil policy" —and of a very soft anvil, at that. The wish to see uniform re-discount rates established for all types of paper, for all maturities, and for all districts in this heterogeneous country of ours, is, to my mind, a much mistaken aspiration. Re-discount rates may differ particularly with regard to maturities, and in given circumstances, also according to types and local conditions; on the other hand, it is the open market rate for standardized prime acceptances that should be fairly uniform all over the country.

It has not infrequently been urged that a distinction be developed between prime acceptances arising out of foreign transactions and prime acceptances arising out of domestic transactions. In favor of this proposal it has been argued that such distinction would permit a difference in rate by virtue of which it would be possible to compete with London upon transactions arising out of foreign business while not necessitating the extension of such a rate to the entire domestic market, including domestic acceptances. The competition of London upon the basis of such a rate as prevails at the present time, say 2½%, would, it is argued, tend to offer domestic borrowers' funds through acceptances at lower rates than borrowing by other methods. Personally, I have not been able to persuade myself that the balance of the argument is in favor of the proposition. If there were a tendency to abuse the domestic acceptance, the market might find it necessary to discriminate and thereby establish a retaliatory rate against domestic acceptances. I should be sorry to see such necessity develop, because my ideal is to see a wide and uniform acceptance market, with as little red tape, discrimination, and differentiation as possible. The acceptance, as the classic prime investment, will have a hard road to travel if we are to explain to the investor that the acceptance of the Bank of Commerce, when granted for a domestic transaction, is not so good as an acceptance given by the same institution for financing a foreign transaction. I think we should be adding one more anomaly to our present unsatisfactory conditions. The consequences of the establishment of two rates for bankers' acceptances would probably be that the Federal Reserve Banks would get all the export and import bills at a lower rate, where our investors, including the country banks, would be buyers of domestic acceptances at a higher rate. For the time being the situation is reversed. The commercial paper rate, as compared to the bankers' acceptance rate, is so low that there is very little inducement for anyone to use domestic acceptances.

Conclusions

To sum it up once more: If, in our mind's eye, we should eliminate the open market functions of the Federal Reserve Banks, we should then have a system where at some thirty Federal Reserve Banks and branches the local member banks would delve haphazard into the general reserve pot—arbitrarily, at poorly fitting re-discount rates, according to their individual whim and requirements—while, as supplementary and principal stabilizer, they would rely upon the call money market of the New York Stock Exchange, an instrument without any direct connection with the Federal Reserve System. As against that, visualize a call money market based on bankers' acceptances and government certificates, directly connected

with the Federal Reserve System and reaching through a network of bill brokers and discount corporations, as we foresee it, every bank worth the name in the country. The first would give us a jerky and wholly unsatisfactory system. The Federal Reserve Banks have made large strides in the direction of the second; indeed, without the intelligent and consistent work done by them in this regard since the very early beginning of their operations, the System could not have functioned as excellently as it did, and as it does to-day. We are, however, still far remote from our ultimate goal, and it is all-important that we should keep our ideal clear before our eye even though we know that it will take time, patience, and consistent planning to get there.

Bankers' acceptances, properly developed to their fullest degree of usefulness, would serve as equalizers of money rates, and the agricultural sections could profit from them in a much larger measure than heretofore. When the country bank, with the aid of the Federal Reserve Bank's re-discount facilities, has carried the making and harvesting of the crop, the financing of the crop's distribution ought to become to a growing degree the function of bankers' acceptances, thus liquidating the local country bank's re-discount operations. But the crop cannot be financed by such acceptances until, with a clear title, it is properly warehoused and graded. A country-wide net of modern warehouse facilities is of vastly greater importance in this regard than new sources of credit. There is credit enough available for the marketing of the crops, if a clear title and proper grading can be furnished and if there is a responsible borrower. Great headway has been made in this regard, but more remains to be done. It is all important that the farming sections, and their representatives in Congress, be made to comprehend that a properly developed open discount market will operate to their benefit to a larger degree than that of any other group. Only when this fact is thoroughly understood will the stupid prejudice be broken down that an open market rate for bankers' acceptances (guaranteed paper) lower than that for single-name (unguaranteed) paper embodies a special advantage for the big fellow at the expense of the small one. The reverse is true; nothing will have a stronger influence towards stabilizing and lowering interest rates for the entire country than a fully developed discount market.

It has been asked: Would the supply of American bankers' acceptances be large enough to support a call money market of the importance that I have sketched? I believe that, with all confidence, we may answer the question in the affirmative. If there were a concerted and continuous demand for bankers' acceptances on the part of the investing banks (and if the floating supply of short Treasury certificates and notes were gradually decreased) the open market rate for these acceptances, as compared with the rate for commercial paper, would become reduced. The lower rate would entail a cheaper cost of borrowing on acceptance credits; it would thus encourage a larger use of such acceptance facilities, and, as a consequence, result in a greater supply of such bills. In addition, however, it is to be hoped that the Federal Reserve Act may be further amended so as to authorize certain finance drafts and to make them "eligible" as investments for Federal Reserve Banks.

No doubt some of the many countries which now have abandoned or suspended their gold standards will wish,

sooner or later, to work their way back to a definite and unrestricted relation to gold. It will be a difficult path for most of them; a long and trying one for many. Not only are we to-day the gold axis of the world, our drawing power for gold is still such that a return to the gold standard for most nations is to-day almost equivalent to a return to a definite relation to the dollar. Countries returning to an unrestricted gold standard—or adopting a gold exchange standard—would, therefore, be greatly assisted by American bankers' acceptance credits with which to protect their newly established gold parities against threatening gold exports, or against their alternative (in case neither gold nor gold exchange would be forthcoming), the recurrence of the dreaded premium of the dollar, i. e., the gold premium. We have a very real and deep interest in the reestablishment of stability of world trade. We know that stability of trade is predicated upon stability of exchanges. Even were we willing to close our conscience against the responsibilities imposed upon us by our stranglehold on so much of the world's gold, our self-interest would compel us to lend a hand in this process of general stabilization. Our agricultural staples will feel the pinch of crippled outlets until this convalescence is accomplished. By the widening of American acceptance powers so as to grant, under adequate safeguards, such facilities to countries emerging from economic darkness, we should be helping them and, incidentally, be helping ourselves. Whether the propitious moment for such action be near or remote, it is bound to come. For all things pass in this world—even human madness. And there is consolation in that thought.

FORECASTING THE FUTURE MARKET IN A LARGE COMMUNITY

By E. L. STONE, JR.

THE importance of forecasting the future volume of business varies widely in different types of industries and may vary considerably at different periods in the life of any particular industry.

The telephone industry has reached a stage such that its total plant and investment are subject to additions which, though absolutely large, are a smaller proportion of the total plant and investment each succeeding year. The plant, therefore, is becoming less susceptible as a whole to radical changes in basic plans. This is especially true of the telephone business in large communities and is a factor which calls for careful forecasting of future operating conditions especially in such communities.

The primary purpose of forecasting the future volume and character of business which can probably be done on a basis of certain specified rates of charge is to determine the amount of investment and expense warranted to accomplish certain results. In the telephone business another purpose of almost equal importance, which is interlocked with the primary purpose, is to ascertain the probable future character of the market to determine what classes of service should be offered to fit the market requirements. This is essential to assure a satisfactory and stable development of the market, satisfactory to both the customer and the producer. In general, a successful industry has four principal parts:

1. A product that is in demand and can be sold at a reasonable and satisfactory profit;
2. The plant and organization required for producing the product;
3. A market;
4. A price schedule producing satisfactory revenue and sales results.

The telephone industry has these same four parts, with telephone service as the product and every family and business firm within the operating area as the market.

In view of the necessity, however, of offering various classes of telephone service at different rates to meet the differing service requirements of individual customers or subscribers, any forecast of future demand for service requires more or less classification or gradation of the market, with an estimate of the service requirements of the various market classes or grades. This introduces the necessity of developing scientific methods of forecasting and classifying the telephone market, and such methods have been developed and tested through about 10 to 12 years of operating experience.

In forecasting the future, it is obvious that estimates for the immediate future will be based largely on existing operating conditions and results, and may not represent what is considered the normal demand. On the other hand, estimates for a long period into the future must be based on an expectation of normal operating conditions and, therefore, to that extent are more theoretical than the short period esti-

mates. From the nature of the problem, forecasts of the future naturally divide into two classes—short period forecasts and long period forecasts.

Estimates for a short period, say, three to six years, will be controlled largely by the following factors:

1. The status of the existing development or sales in the market. In the telephone business this involves an understanding of the amount of market already supplied, the amount and character of the market as yet unsold, from what strata of the market the new subscribers or buyers are now coming and the amount of backed-up or unsatisfied demand.

2. The past and present trend of sales.

3. The probable increase in the volume of the market.

These short period forecasts are the basis upon which year-to-year operating expenditures are made, but to avoid radical revisions in operating practices in the more distant future, it is essential that these provisional estimates should be related to long period forecasts of perhaps 15 to 25 years. This probably applies, in general, to all large industries, but in addition in the telephone business the long period forecast is necessary as a basis for engineering many features of telephone plant which must be located and installed with definite regard to their use for a very long period in the future.

This paper will discuss a method of forecasting future telephone market conditions for a period up to 25 years in a large community. These forecasts are a part of a comprehensive survey of future market, telephone development and operating conditions, and as a background for an understanding of the method of forecasting the market, a brief outline of the complete survey is perhaps of interest.

A complete survey and forecast of a large community consist of four quite separate parts:

1. A statement and analysis of the existing market and sales, including an analysis of sales by market classes, service classes, and by local sectional areas;

2. A forecast of the market for telephone service at a future date or dates;

3. Estimates of the amount of service that will be sold in the areas under consideration at a future date or dates under specified price or rate conditions;

4. An analysis of the relation between revenues and investment and expense resulting from the estimates of sales under the various price schedules to be tested, and finally the selection of the most satisfactory commercial basis.

The scope of this discussion involves only certain steps of the first two parts —the analysis of the existing market and the method of constructing the future market.

I. An Analysis of the Existing Market in a Large Community

The steps of a complete telephone market and sales analysis are as follows:

1. Selection of the Survey Area

2. Division of the Survey Area in Homogeneous Market Sections

To classify families on a basis of type and rental of quarters occupied it is necessary first to divide the community into small sections within each of which rental conditions are based on the same economic considerations. This will be discussed in the next step.

3. Determination of the Method or Scheme of Classifying and Grading Family Types and Business Firms

The telephone market has two principal divisions—the business market and the residence market.

In the business market, telephone service is sold closely on a business firm basis, and may be analyzed by recording and classifying firms according to type of busi-

ness done. The business market is also divided into two parts—general business firms and neighborhood business firms. This may be explained briefly by stating that the neighborhood business firms are those located outside of the general business section of a city and throughout the residence sections and are dependent on the immediate neighborhood for support. The firms in the general business section are assumed to be dependent on the community as a whole for support. Manufacturing firms will appear in both divisions of the business market. Tables 1 and 2 illustrate typical summaries of the two parts of the business market.

In the residence market, telephone service is generally sold on a family basis. As stated before, different classes of service (individual line, two-party line, four-party, six-party, etc.) can be provided at different rates. It is, therefore, necessary not only to record the number of family units, but also to grade the families into economic classes or grades. This is accomplished by first dividing the survey area geographically into uniform market sections and then by classifying each family by the rental value of quarters occupied. In order to use rental values as the basis for grading the families it is necessary to first divide the community into homogeneous market sections [1] in order

TABLE 1: BUSINESS SECTION SUMMARY—PRESENT—1921

COMMERCIAL SURVEY—FIELD WORK SEPT.—NOV. 1921

Class No.	CLASS OF BUSINESS	Total Firms	Total Users	Per Cent	USERS OF			PRESENT BELL SERVICE								
											P. B. X.					
					Bell	Ind.	Both	Coin Box	One-Party Meas.	Party	Users	Trks.	Sta.	O.L.	O.S.	Ext.
1	Department Stores Class No. of Rooms	5	5	100.	5	5	5	48	6		5	170	864	29	5	
2	Hotels 1st 3378 ..	5	5	100.	5	5	5	30	25		5	187	3631	15	9	6
3	Hotels 2nd 1876 ..	16	16	100.	16	10	10	24	4		8	30	1139	2		
	Vacant Bldgs. Rooms..															
4	Office Mod. 43 1387 ..	2439	2396	98.	2366	722	692	21	2207		476	1698	5679	579	178	2014
5	Bldgs. Old 19 147 ..	670	583	87.	559	123	99	11	545		31	97	317	9	25	209
6	Misc. Offices	619	565	91.	547	195	177	33	536		64	343	1092	371	51	308
7	Retail—Large	43	43	100.	43	34	34	29	13		39	186	641	27	17	7
8	Retail—Medium	1428	1054	74.	851	468	265	279	590		35	79	229	13	18	199
9	Retail—Very Small	117	21	18.	5	16		4	1					1		
10	Groceries or Markets	80	53	66.	25	39	11	5	22		3	18	51	1		2
11	Drug Stores	39	39	100.	39	36	36	76	22							6
12	Banks & Trust Cos.	17	17	100.	17	15	15	16	5		15	165	991	39	4	4
13	Theatres—Large	15	14	93.	14	7	7	20	17		4	13	42	1		12
14	Theatres—Small	13	11	85.	10	2	1	4	7							1
15	Amusement Places	31	18	58.	15	8	5	17	1							1
16	Society Rooms	60	42	70.	39	13	10	14	40						1	21
17	Garages—Public	47	45	96.	42	20	17	15	39		3	11	36	3	22	12
18	Stables—Public	13	11	85.	8	6	3		7						1	
19	Fire & Police Stations	6	6	100.	6	6	6	6	2		1	14	9	87	11	2
20	Wholesale—Large	89	89	100.	89	83	83	8	22		81	417	1509	52	6	25
21	Wholesale—Small	468	456	97.	413	323	280	18	426		34	88	249	3	2	194
22	Mfg.—Large	35	35	100.	35	24	24	3	37		32	159	743	22	1	4
23	Mfg.—Small	182	181	99.	178	70	67	5	129		62	139	520	5	7	90
24	Workshops	910	728	80.	659	178	109	17	647		6	13	29		12	118
25	Warehouses—Good	53	51	96.	45	24	18		20		5	17	65	2	52	6
26	Warehouses—Poor	45	4	9.	3	2	1		2						1	
27	Yard Storage	22	13	59.	11	5	3	1	6		1	2	3		4	2
28	Power Houses	3	2	67.	2	1	1		2						2	
29	Transportation	14	14	100.	14	12	12	16	17		5	44	72	26	79	3
30	Religious Insts.	11	8	73.	8	2	2	2	9	3	2	3	20			9
31	Government Bldgs.	9	9	100.	9	9	9	11	31		4	136	552	66	31	12
32	Educational Insts.	5	5	100.	5	3	3	1	1		3	15	78			
33	Homes and Hospitals	3	3	100.	3	2	2	1	2		1	11	133		2	3
34	Large Clubs	13	13	100.	13	11	11	13	9		10	57	588	5		6
35	Parks	2	1	50.	1										1	
36	Telephone Exch.	3	3	100.	3	2	2	2	47						37	4
37	Public Mkt.	2	2	100.	2	2	2	1	14		1	9	44	1	2	4
38	Erie St. Cemetery	1	1	100.	1				1							
39																
	Total Occupied	7533	6562	87.	6106	2483	2027	751	5511	3	936	4121	19326	1368	581	3284

to (a) segregate foreign population and races, (b) segregate single or multi-family houses that should have closely the same economic basis of rental.

The final aim is to so select the market sections that all families in each rental class in each section will be of similar type. This means that the analysis of the market and sales will be accurate for each market section, but that summaries of results grouping market sections will introduce important variations and inaccuracy in the analysis. However, a complete summary of a community is useful for comparison purposes with other communities. A complete summary of a residence market of a city is illustrated in Table 3.

4. Preparation of Record of Existing Subscribers and Service by City Blocks

This consists of the preparation of a card file of subscribers and the listing of subscribers and service in each city block on a form designed for the purpose of later classifying these families and firms in the field.

5. Field Record and Classification of Existing Families and Business Firms

With one form for each block providing a list of existing families and firms having service with the class of service of each, and another form for each block designed to classify non-subscribers, a house-to-house canvass is made and every family and firm recorded and classified.

[1] It is obvious in any large community that rental values for the same size or type of house will vary according to age, popularity, and convenience of location of the house or neighborhood. It is also obvious that houses renting for the same value may house families of very different type and market grade. However, these conditions are generally uniform for neighborhoods of varying size and to save the additional work required to forecast all details down to a city block basis it is desirable to group as many blocks as conditions will permit. In general, market sections vary in size from about 10 to 150 blocks.

TABLE 2: NEIGHBORHOOD BUSINESS TELEPHONE DEVELOPMENT—PRESENT—1921

COMMERCIAL SURVEY—FIELD WORK SEPT.—NOV. 1921

Business Classification	Firms	Total Users	Per C't	USERS OF			BELL SERVICE										Extra Service
				Bell	Ind.	Both	Coin Box	One Pty.	Two Pty.	Rural	P. B. X.						
											Users	Trks.	Sta.	O.L.	O.S.	Ext.	
Offices	2,202	1,856	84.	1,633	624	401	71	1,534	5	3	82	269	1,061	53	357	579	419
Retail	6,868	3,834	56.	2,593	1,803	562	1,119	1,447	6	13	60	190	633	10	1	201	53
Retail (very small)	1,595	162	10.	76	93	7	53	24								3	1
Groceries or Markets	2,954	1,795	61.	1,174	803	182	483	744	1	11	7	67	92			44	72
Drug Stores	384	384	100.	374	333	323	473	129	1							5	229
Theatres	107	46	43.	39	10	3	8	35								10	4
Amusement Places	260	98	38.	79	25	6	55	24		1	1	1	7		1	6	3
Society Rooms	251	87	35.	67	27	7	30	40	1						1	13	5
Garages (Public)	209	198	95.	185	62	49	30	148	3	1	3	6	24	1	14	53	14
Stables (Public)	64	29	45.	25	14	10	1	19		1					6	5	2
Fire and Police Stations	55	55	100.	55	51	51	43	9							68	6	68
Wholesale	188	188	100.	162	126	100	5	131			36	141	512	7	4	65	14
Mfg. Large	307	307	100.	304	135	132	13	91			253	1,223	7,392	120	98	82	151
Mfg. Small	605	598	99.	580	224	206	4	462			149	337	1,170	13	37	292	72
Workshops	3,580	1,657	46.	1,405	456	204	106	1,290	7	1	15	29	94		15	196	29
Warehouses (Good)	124	115	93.	106	55	46	1	76			9	26	77	3	43	24	23
Warehouses (Poor)	90	12	13.	4	9	1		4								6	
Yard Storage	470	349	74.	295	228	174	1	267	4	2	24	70	183	3	42	92	45
Transportation	49	48	98.	44	19	15	18	25	9	2	6	67	161	68	89	10	109
Railroad Yards	17	16	94.	15	8	7	1	24							39	11	49
Car Barn Power Houses	47	42	89.	39	8	5	1	19			1	1	4		71	12	53
Religious Insts.	507	184	36.	143	66	25	14	105	41		2	2	9	2	1	73	20
Government Bldgs.	19	12	63.	11	8	7		10	2		3	12	52	15		13	4
Educational Insts.	323	245	76.	136	165	56	50	108	6	2	8	24	142	3	6	69	44
Homes or Hospitals	84	80	95.	76	30	26	21	64	6		15	57	456	14	1	53	31
Clubs, Large	33	30	91.	27	12	9	11	13	1		12	35	154	1	1	11	11
Hotels	8	7	88.	7	4	4	9	12	9	1	4	18	388		1	2	29
Parks	25	6	24.	6				11								1	5
Cemeteries	47	15	32.	11	9	5		10	2		1	2	21		1	1	3
Miscellaneous	42	38		27	18	7	28	185	1		5	30	63	281	20	20	212
Grand Total	21,514	12,493	58.	9,698	5,425	2,630	2,649	7,060	105	38	696	2,607	12,695	594	917	1,958	1,767

The efficiency and accuracy of this work depends largely on experienced training and supervision of the field men.

6. Summary of the Field Data

This may be completed during the progress of the field work by a force of clerks. The summaries provided for each market section and for the community as a whole are illustrated in Tables 1, 2 and 3. The results given in these tables were the actual results of an analysis of a community of about 1,000,000 population.

II. *A Forecast of the Future Market in a Large Community*

A forecast of the future market in a large community has five steps:

1. An estimate of the future total population at certain dates, for telephone engineering purposes generally about 6, 12 and 20 years hence, and an estimate of the local distribution of the total population figures;

2. A classification of the population assigned to each market section at a future date or dates;

3. An estimate of the total number of business firms to be expected in each of the business classes;

4. A forecast of the changes that will probably take place in each city block within the

TABLE 3: RESIDENT TELEPHONE DEVELOPMENT—PRESENT—1921

COMMERCIAL SURVEY—FIELD WORK SEPT.—NOV. 1921

Rental Class Private Residence	Families	Total Users	Per Cent	USERS OF			BELL SERVICE											Ext.	Extra Service
				Bell	Ind.	Both	Coin Box	One Pty.	Two Party	Four Party	Rural	P. B. X. Users	P. B. X. Trks	P. B. X. Sta.	P. B. X. O.L.	P. B. X. O.S.		
100 Up	8,898	8,525	96.	8,320	448	243	27	3,434	1,873	3,008	26	22	25	177	1	5	3,186	75
75-100	10,385	8,672	84.	8,234	591	153	6	1,118	1,819	5,272	21					4	703	6
55-75	18,411	11,758	64.	10,799	1,152	193	1	989	2,041	7,697	73					5	396	7
40-55	18,561	7,817	42.	6,934	991	108	7	501	1,287	5,025	114					8	112	8
30-40	14,085	3,848	27.	3,117	776	45	1	263	509	2,209	132					6	39	3
25-30	9,644	1,712	18.	1,238	493	19	2	108	191	804	133					1	10	1
20-25	8,127	974	12.	633	353	12		36	88	365	144						5	
15-20	6,947	469	7.	316	157	4		20	56	148	92						1	
10-15	4,513	144	3.	109	35			3	14	58	34						1	
Under 10	2,420	26	1.	14	12			1	1	5	7							
Total	101,991	43,945	43.	39,714	5,008	777	44	6,473	7,879	24,591	776	22	25	177	1	29	4,453	100
Flats																		
100 Up	465	423	91.	414	19	10		137	124	154							27	1
75-100	2,263	1,862	83.	1,789	89	16		241	489	1,059							19	
55-75	10,328	6,311	61.	5,730	632	51	8	413	1,191	4,119						2	48	3
40-55	20,369	7,456	37.	6,582	939	65	10	414	1,234	4,923						1	51	
30-40	23,004	4,045	18.	3,205	888	48	7	234	653	2,309	1					1	31	
25-30	15,515	1,457	9.	1,105	369	17	3	116	239	746	1						11	
20-25	13,684	794	6.	559	244	9	5	38	118	393	5						5	
15-20	13,892	457	3.	300	166	9	1	21	61	214	4						8	1
10-15	9,046	129	1.	75	58	4	1	2	9	63							2	
Under 10	4,688	276	6.	86	192	2	5	16	17	48								
Total	113,254	23,210	20.5	19,845	3,596	231	40	1,632	4,135	14,028	11					4	202	5
Ap'rtm'nts																		
P. B. X.	471	471	100.	471	1	1	1	4	3	1		7	32	577				455
100 Up	1,663	1,540	93.	1,530	27	17	5	655	484	389							137	3
75-100	1,631	1,353	83.	1,331	28	6	4	284	419	626						1	20	3
50-75	3,514	1,751	50.	1,683	73	5	8	253	439	985							10	2
35-50	1,855	440	24.	407	33		5	61	92	249							3	
25-35	583	58	10.	51	7		3	4	3	41								
Under	211	43	20.	38	5		3	1	8	26								
Total	9,928	5,656	57.	5,511	174	29	29	1,262	1,448	2,317		7	32	577		1	170	447
Lodging Houses																		
Good	414	343	83.	335	24	16	104	86	88	107		5	18	205		4	23	59
Medium	1,749	678	39.	590	102	14	89	112	143	254						1	25	9
Poor	725	126	17.	106	20		10	17	29	50							1	
Total	2,888	1,147	40.	1,031	146	30	203	215	260	411		5	18	205		5	49	68
Light H'sek'ping	5,225																	
Gd. Total	233,286	73,958	32.	66,101	8,924	1,067	316	9,582	13,722	41,347	787	34	75	959	1	39	4,874	274

general business section with a resulting picture of what each block will have at a future date or dates;

5. An estimate of the number and classification of neighborhood business firms in each residence market section at a future date or dates.

A brief outline of these steps will indicate the general method followed and the factors considered in building up a statistical picture of a community at certain dates of the future.

1. The Population Estimate of the Community as a Whole

In approaching the responsibility of estimating the future population of a community for any period up to at least forty years, it can be assumed definitely that no two large communities in the United States are alike or have had the same influences exerted in the same relative proportions on their past growth. The fact that one city after reaching a certain size has continued to increase at a certain rate has practically no relation to the growth to be expected in another city, unless both cities have the same birth and death rates and are not attracting from or losing population to outside regions. This necessity of analyzing carefully the influences that have caused the actual past growth of a city and of forecasting the probable future influences to be expected in that city makes each individual case a very interesting study.

The amount of detailed study warranted as a basis for forecasting the future population of a city varies very widely and is dependent on the character of the community and the nature of the influences affecting its growth.

In general, a city, or any other defined area, increases in population from two sources:

1. The excess of births over deaths;

2. The attraction of population from outside.

The amount of increase in population in the past due to the excess of births over deaths can be very closely computed, either from statistics available for that community or based upon general ideas developed from analyzing these statistics for other cities. Estimates of the future increases from this source should be based on the general ideas underlying the estimate of the character of population that will be attracted from outside. Negro migration, immigration restrictions and birth rate and death rate statistics for various races and nationalities have a bearing on this estimate for the larger communities. However, this part of the population estimate is generally of decidedly less importance than the estimate of the population that will come into or go out of the community, and from general experience it is found that a very detailed analysis of the population increase from this source is not necessary.

In most of the larger communities the analysis of the population that has been attracted to the community provides a very interesting and often complicated study. In addition, after an analysis of the past growth has been satisfactorily completed, the real problem remains to forecast the influences that will attract population in the future and to translate these ideas into population growth figures.

The principal influences that attract population to a city are:

1. The increase in wholesale, retail, and general office business, due to the development of a tributary territory;

2. The attractiveness of the community to homeseekers of the "retired from business" class;

3. The increase in industrial development which may be expressed as the increase in the demand for labor.

It is well established that cities go through different periods of development, and theoretically the influences and the results of these influences should be analyzed for these definite periods. However, in actual practice it is necessary to adopt the Federal census periods, and this introduces some consideration of the changes in the fundamental conditions which may have occurred between census dates.

If the growth of a city during a census period has been due to all three of the influences outlined above, it may be very difficult to determine the relative effect of each. In such a case, the best method seems to be to outline the tributary territory of the city; then analyze the growth of this territory and finally estimate the relative amount of population growth in the city due to the development of the tributary territory. It is also possible to approximate the relative amount of city growth due to increase in industrial employees during the same period. As a basis for determining the ratio of population increase to industrial employee increase, the actual ratios of certain industrial cities that are growing almost entirely because of this influence may be computed. Actual ratios thus obtained will be found to be quite uniform, but a certain amount of judgment is generally involved in estimating the proper ratio for the city in question. Assuming that these two influences, the tributary territory and industrial expansion, can be closely estimated, the remainder of the growth, after deducting the excess of births over deaths, will be due to other general influences, including the attraction for "retired" population.

As we are rapidly approaching a condition in which all sections of the country will be normally settled, the future growth of cities will be more and more dependent on industrial expansion. This does not mean that future improvements in cultural conditions will not have important reactions on certain agricultural sections and react on certain cities. There are many potentialities from the development of water power, irrigation and more scientific soil treatments that will later react on economic conditions. However, from the standpoint of forecasting population growth for the next two or three decades, a knowledge of the trend of industrial expansion is by far the most important qualification.

Population estimates for a city as a whole should represent the expectations for the real community without regard to political boundaries. The real community may consist of a city with a small amount of overflow of population just outside the city boundaries, or it may consist of a city and a relatively large surrounding area including certain incorporated suburbs.

The table upon page 276 is intended to outline a theoretical population estimate for a community that has been growing at a relatively high rate.

This estimate represents a community that increased rapidly from almost nothing at 1870 to 130,000 at 1900, due to the development of its tributary territory. During this period a certain amount of industrial development occurred in the city, probably to supply a nearby market. From 1900 to 1910 the tributary territory continued to influence considerable growth in the city, but very much less than previously, and since 1910 the effect of the tributary territory has been rather unimportant.

Between 1910 and 1920 an important industrial development took place, and this is expected to continue very rapidly through this decade and then less rapidly from 1930 to 1940.

The Future Local Distribution of Population

Population statistics are obtainable from the Bureau of the Census for all civil districts, including wards and enumeration districts. The latter are small in area and may be grouped to correspond to almost any larger divisions of the city. It is, therefore, possible to tabulate a statistical population history of any divisions of the community, involving a small amount of estimating if it is necessary to divide certain enumeration districts.

There are two steps in a forecast of the local distribution of population. The first is primarily an estimate based upon population statistics of the past, a record of existing vacant land and a more or less intimate knowledge of local conditions and influences affecting the growth of the various sections of the community. The other step is primarily a check on the results of the first step and consists of (1) an estimate of the classification of families in each market section at one or more future dates, (2) a summary for the entire community of the families so classified, and (3) a comparison of this summary with the analysis and classification of existing families. If this comparison indicates that the community has been graded up or down in character contrary to the fundamental ideas of the influences that are going to cause the community to increase in population, then the amount of population assigned to certain high grade sections must be shifted to certain lower grade sections, or vice versa. This means a very careful adjustment of the future population increase in high, medium and low grade sections to finally result in a classification of families at various future dates for the community as a whole that will carry out the ideas underlying the population estimates as to the amount and character of population that will be attracted. A large industrial expansion would mean a corresponding influx of certain classes of labor and a reaction on certain sections of the city.

The problem of determining the best method of forecasting the distribution of population in various sections of the

Date	Total Population	Decade Increase	Natural	Decade Increase Due to Tributary Territory	Industrial Expansion	Other Influences
1890	65,000					
1900	130,000	65,000	5,000	54,000	3,000	3,000
1910	170,000	40,000	10,500	21,500	5,000	3,000
1920	250,000	80,000	17,000	10,000	49,000	4,000
1930	350,000	100,000	25,000	8,000	61,000	6,000
1940	450,500	100,500	35,000	8,000	50,000	7,500

community depends principally on the size and complexity of the community.

The best treatment for the largest community is to analyze the distribution within the area of attractive commuting service and to analyze the past growth and forecast the future by zones radiating from the center of the community. Then, as a second step, each zone might be divided into segments representing the directions of growth. These various zones and divisions may be forecasted with relation to each other, taking into consideration variations in existing transit conditions, probabilities of transit improvement, the availability and desirability of vacant land and the probable reconstruction and crowding of population in the older sections. Having decided upon a reasonable distribution in these large zones and segments, further distribution may be made to smaller civil districts, market areas, etc.

For cities of the next class, grading down in size to about 500,000 population, a similar zoning treatment is satisfactory, using selected ward boundaries as the natural divisions for zones and segments and finally estimating the future population at certain dates in each ward, market section and working section. "Working sections" are divisions of the market area and are the smallest areas for which complete population and character estimates are made. They generally vary from about 6 to 15 blocks in area.

For cities of the next class, from about 500,000 population down to 200,000, a zoning treatment is generally unnecessary. In these cases the community may be divided into certain natural and economic divisions, using selected ward boundaries. The final estimates are then carried out for market sections and working sections.

For cities smaller than 200,000 the future distribution of population may generally be forecasted directly to individual wards and then to market sections and working sections.

After preliminary population estimates for the community as a whole, each ward, market section and working section have been agreed upon, it is then necessary to translate the population figures into terms of families in order to provide a basis for classifying future families into market grades. This is generally based upon census statistics indicating the trend of the population per family for two or three decades in each ward and supplemented by corresponding statistics for the smaller census areas, enumeration districts. Until another census is available, this estimate of future population per family is unusually difficult, due to the radical decrease in the population per family figures between the 1910 and the 1920 censuses. This rate of decrease cannot continue, as in some sections the 1920 figures were very low.

In this discussion it has been assumed that the future volume of residence market could be forecasted readily in terms of population and then translated into terms of families. In some communities the past growth and changes in local distribution can be analyzed better in terms of families, and in such cases the future market should be forecasted in the same terms.

2. *Classification of the Population Assigned to Each Market Section*

As outlined earlier in this paper, the *existing* residence market is classified and graded in terms of rental of quarters occupied. The field record and classification provides a statement of the total families in each block and in

each market section with the families classified (1) as to type of quarters occupied (private residence, flat, apartment, lodging house or light housekeeping) and (2) as to rental class. This method permitted a grouping in each rental class of families of similar type and economic grade.

The population estimates provide a statement of the total families to be expected at certain future dates in each market section.

The future market is then developed for each market section by classifying and grading the families estimated for that section, first, by forecasting the proportions of the total that will be in private residences, flats, apartments, etc., and second, by forecasting the future classification of the families at each date in terms of "types of families" actually in that market section, or in the city, at the time of the existing market analysis. This method of constructing the future market in terms of types of families actually there today permits the maximum amount of confidence in the estimates of what can be sold at specified rates to various types of families. It also eliminates any necessity of forecasting changes in rent levels and of relating telephone service rates to new rental values.

The necessity of estimating for each market section, the division of the total families into the relative numbers who will live in private residences, flats, apartments, etc., requires a very thorough analysis of real estate trends, of the expansion or shifting of business, industrial, apartment house and lodging house areas and of the relative popularity of the various directions of growth in outlying suburbs, etc.

The market sections are originally laid out to segregate uniform real estate conditions as well as uniform nationalities and, therefore, certain sections will not change appreciably in character while others will be very largely changed. The latter must be considered very carefully. Zoning ordinances are a very important consideration and in general a very appreciable aid in this work because of the restriction of multi-family houses to specified areas and the definiteness added to any estimates of probable reconstruction. To stabilize real estate conditions will also tend to stabilize telephone plant conditions and promote more accurate plans.

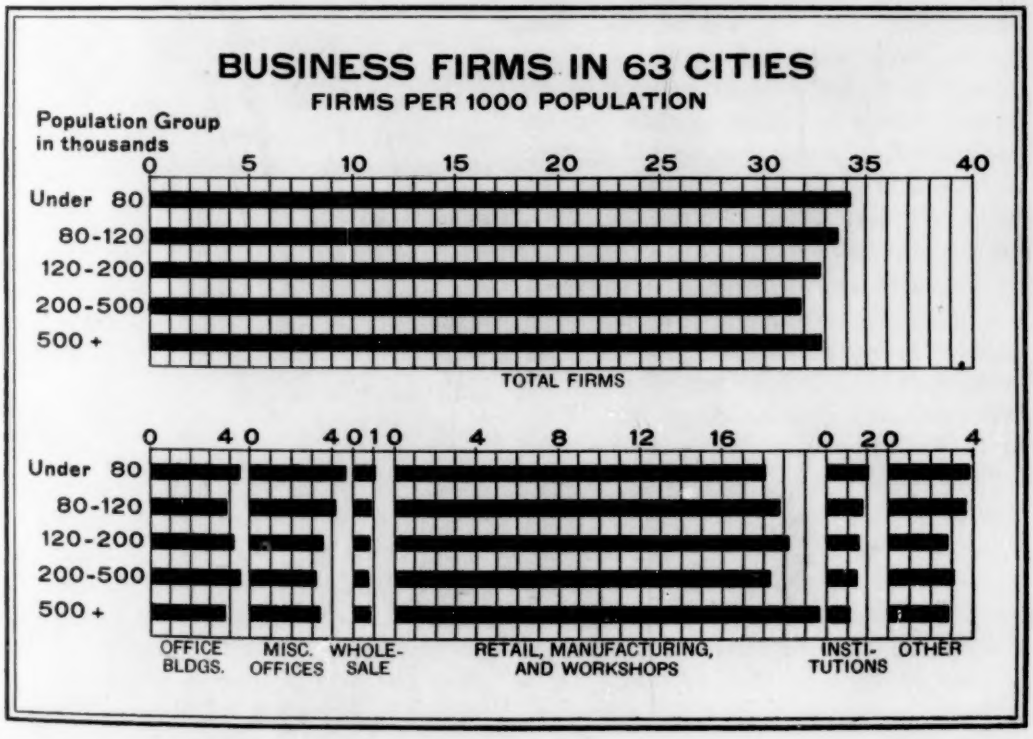
After these estimates of the future families in private residences, flats, apartments, etc., and of the types of families under each of these classes have been made, based upon the best judgment and expert local advice that can be obtained, these estimates are then summarized for the community as a whole and compared with the corresponding summary of existing conditions. In many cases it is also possible to compare with a previous market analysis made several years back, and thus check the forecast of the future with actual changes over a certain period of the past. These comparisons will indicate the relative amount of increase or decrease estimated for private residences, flats, apartments, etc., and will provide an opportunity for considering broadly whether the detailed estimates carry out the best ideas of future general tendencies in residence construction. If it is decided that certain types of construction have not been properly forecasted, the market section estimates are revised to meet the broader ideas.

The summary of the second step showing the classification of future families by "types of families" may also be compared with the corresponding

summary of existing conditions. In this connection it should be remembered that the population estimate for the community as a whole is based upon certain ideas, either of the amount and kind of industrial development to be expected, or of the amount and kind of general business development, or both. Changes to be expected during the same period in the grading of the families should agree with these fundamental ideas. As stated previously, this also has a bearing on the amount of population increase estimated for various sections of the community. If the better class sections have been overestimated the summary will show too many families in the upper types. However, if one high-grade section has been overestimated and another high-grade section underestimated, the total summary figures may not be sufficiently distorted to indicate the errors.

3. An Estimate of the Total Number of Business Firms and the Future Number in Each Class of Business

Statistics collected in about 150 market studies indicate considerable variation in large cities in the relation between population and total number of firms and even between population and total retail firms. However, in the results of successive market studies of the same city it is clearly indicated that the total number of firms and the total retail firms increase very closely in the same ratio as population. In general there seems to be a slightly lower rate of increase in firms than in population, but a few cities have experienced the reversed condition. Further analysis of this is under way but there seems to be a well-established basis for forecasting the increase in the number of firms in relation to the increase in population supporting them. It is not as



yet clear whether population is a better basis for this than families.

The field record and classification of business firms summarized as illustrated in Tables I and II provides a basis for determining the relationship between the actual number of firms in each business class and the total population of the community or area supporting them. It is reasonable to assume that with few exceptions the firms in the central business section are supported by a population corresponding to that of the community. Certain classes, such as department stores, wholesale and mail order establishments, may serve very much larger areas and should be forecasted in relation to the broader considerations. Large manufacturing establishments are also a special consideration.

In building up the future total business market while it is reasonable to assume that total firms will increase in closely the same relation as the population, each class of business firms should be considered in respect to its present status in the community and its probable future increase, and in certain classes the ratio of increase may be relatively very different from the population increase.

The firms to be located in the general business section are distributed by a block-to-block inspection of existing conditions and a forecast of probable reconstruction, new buildings, etc. This is discussed in the following section.

The business firms located in the residence sections, called neighborhood firms, are almost entirely small retail stores for supplying the immediate neighborhood and are increased and distributed by a special study of conditions in each market section. In a few of the largest cities there are often certain secondary business centers that serve quite large areas and may have a few relatively large retail stores. Neighborhood business firms in any particular section should not be increased in direct proportion to the population of the area apparently supporting them, but should be based upon an investigation of the local conditions in each section. In treating a small number of firms it is obvious that the kind and size of individual stores and the relative status of the real estate development of the neigborhood should be carefully considered.

4. The Forecast of Changes in Each City Block of the Central Business Section

As stated in the previous section, the total number of firms in the general business section should be increased in approximately the same ratio as the increase in population estimated for the community as a whole. This method permits the preparation first of an estimate of total firms at certain future dates in the section as a whole and in each class of business, and second a field estimate of the number of firms of each class at corresponding dates in each block. This means that the totals are determined by a broad consideration of the future of the community and the block estimates are made by a field inspection and forecast of changes in each individual block.

In this connection it is important that the preliminary estimates for each block should be made on a basis of personal judgment supplemented by as much local information as possible regarding real estate trends, building restrictions, city plan, assessed valuations, owners of important sites, plans of owners holding plots for proper time to reconstruct or to build important buildings and prob-

able future transit conditions. If the summary of the individual estimates of the blocks indicates important variations from the statistical estimate of totals by classes, then both the block estimates and the statistical estimate of totals should be reconsidered and finally made to agree.

This outline of those steps of a complete commercial survey necessary to forecast the future telephone market of a large community is confined to a technical statement of the general method. It should be emphasized that these methods permit the building up of the future market in accordance with certain decisions involving broad considerations of the changes of economic conditions in the country as a whole and in sections of the country, and these broad considerations and conclusions uniformly treated throughout the country assure reasonable consideration of the advantages and disadvantages of all cities relatively to each other.

RELATION OF CONSUMERS' BUYING HABITS TO MARKETING METHODS

By MELVIN T. COPELAND

FROM the standpoint of consumers' buying habits, merchandise sold in retail stores can be divided roughly into three classes [1]:—(1) convenience goods; (2) shopping goods; (3) specialty goods. Using this classification, one of the initial steps in laying out a sales or advertising plan is to determine whether the article to be sold will be purchased by consumers ordinarily with shopping or without shopping, at points of immediate convenience or in central trading districts, with insistence on an individual brand, with merely brand preference, or with indifference to brand.

This preliminary analysis facilitates the determination of the kind of store through which the market for the specific product should be sought, the density of distribution required, the methods of wholesale distribution to be preferred, the relations to be established with dealers, and, in general, the sales burden which the advertising must carry.

Convenience Goods

Convenience goods are those customarily purchased at easily accessible stores; examples are canned soup, tobacco products, electric light bulbs, safety razor blades, shoe polish, laundry soap, crackers, popular magazines, confectionery, and tooth paste. The consumer is familiar with these articles; and as soon as he recognizes the want, the demand usually becomes clearly defined in his mind. Furthermore, he usually desires the prompt satisfaction of the want. The unit price for most articles in this class is too small to justify the consumer's going far out of his way or incurring the expense of a street-car fare in order to procure a special brand. It is for such reasons as these that a product subject to this type of demand gains a large sales advantage when it is purveyed in numerous stores located at points easily accessible to consumers.

The consumer is in the habit of purchasing convenience goods at stores located conveniently near his residence, near his place of employment, at a point that can be visited easily on the road to and from his place of employment, or on a route traveled regularly for purposes other than buying trips.

[1] The methods of marketing goods for retail distribution are essentially different from the methods of marketing goods for wholesale consumption. In the one case it is necessary to select marketing methods whereby the goods can be parceled out in small lots to individual consumers; in the other the sales are made in wholesale lots for large scale use, as in manufacturing or in construction work.

Mr. C. C. Parlin, manager of the Commercial Research Division of the Curtis Publishing Company, has divided merchandise for retail distribution into two classes—convenience goods and shopping goods. (*Merchandising of Textiles*, pp. 5-6.) In the case of shopping goods he made a distinction between men's shopping goods and women's shopping goods. In the classification explained in this article, convenience goods are defined to include practically the same merchandise as was included by Mr. Parlin in convenience goods. The category of merchandise included in shopping goods in this new classification, however, differs from Mr. Parlin's classification, and a new class—specialty goods—is added.

In sparsely settled districts, to be sure, the distance a consumer must travel to reach a store carrying convenience goods necessarily is greater than in densely populated districts, but fundamentally the buying habits are the same in all districts. Convenience goods, moreover, are purchased at frequent intervals by the average consumer, and these "repeat" purchases enable the stores handling such wares to secure adequate patronage with reasonably small investments in stocks of merchandise.

Typical retail establishments carrying convenience goods are grocery stores, drug stores, and hardware stores. A majority of these stores are unit stores,[2] but it is in the trade in convenience goods that chain store systems have shown the greatest development. One of the essential characteristics of chain store systems is the combination of the advantages of large scale operation with those of small scale selling by locating branches at points which can be reached easily by consumers for the purchase of convenience goods. The few chains of specialty stores, which for reasons to be indicated later operate on the principle of one store in a town, constitute an exception.

Because of the desire of consumers to purchase this type of merchandise at easily accessible stores, the manufacturer of a convenience article must aim to secure distribution of his product through a large number of stores in each territory. Many of the retail outlets commonly utilized for this purpose at the present time are small unit stores; consequently, to obtain this widespread distribution it is customary for most convenience goods to be sold through wholesalers. Whenever a manufacturer of a product in this category elects to sell directly to unit stores, he must develop a large sales organization and arrange for his salesmen to visit the retailers at frequent intervals.

[2] A unit store is a store, without an elaborate departmental organization, owned and managed as an independent unit for the sale of goods through personal salesmanship.

Shopping Goods

Shopping goods are those for which the consumer desires to compare prices, quality, and style at the time of purchase. Usually the consumer wishes to make this comparison in several stores. Typical shopping goods are gingham cloth, women's gloves, chinaware, and novelty articles. The typical shopping institution is the department store. Shopping goods are purchased largely by women. Ordinarily a special trip is made to the shopping center for the purpose of buying such merchandise. As a rule, however, the specific store in which the purchase is to be made is not determined until after the offerings of at least two or three institutions have been inspected. The exact nature of the merchandise wanted may not be clearly defined in advance in the mind of the shopper; this is in contrast to the usual attitude in purchasing convenience goods. The purchase of shopping goods, furthermore, usually can be delayed for a time after the existence of the need has been recognized; the immediate satisfaction of the want is not so essential as in the case of most convenience goods. Because of the variety of merchandise which must be carried to satisfy the shopper and the relative infrequency of purchases of shopping articles by the average consumer, the store catering to the shopping trade must have a central location which attracts shoppers from a wide territory. In order to justify the expenses of operation in such a location, the volume of sales

must be large. Conversely, it follows that the type of store which handles convenience goods ordinarily cannot carry a large enough variety and range of products to offer an attractive opportunity for shopping.

A store location suitable for trade in shopping goods usually is not adapted to the convenience goods trade; for the rental is high and the delivery interval inconvenient to consumers. It is seldom that a department store, for example, has found it possible to operate a grocery department at a profit. The factors of location, organization, and consumers' buying habits, which enable a department store to cater effectively to the shopping trade, handicap it in developing a business in convenience goods. When a manufacturer is laying out his marketing plans, therefore, he ordinarily finds it inconsistent to attempt to distribute his product through both department stores and scattered unit stores or through both department stores and chain stores. The type of store selected depends upon whether it is a shopping line, a convenience line, or a specialty line.

The number of stores selling shopping goods, furthermore, is much smaller than the number of convenience stores. The average size of the shopping store is large and its credit generally strong. This facilitates the marketing of shopping goods directly from manufacturer to retailer.

Specialty Goods

Specialty goods are those which have some particular attraction for the consumer, other than price, which induces him to put forth special effort to visit the store in which they are sold and to make the purchase without shopping. In purchasing specialty goods, the consumer determines in advance the nature of the goods to be bought and the store in which the purchase is to be made, provided a satisfactory selection of merchandise can be effected in that store. Whereas convenience goods are purchased at stores that are easily accessible, it ordinarily is necessary for the consumer to put forth special effort to reach the store selling specialty goods. As in the case of shopping goods, the actual purchase of a specialty article may be postponed for a time after the specific need has been felt by the consumer. Examples of specialty goods are men's clothing, men's shoes, high-grade furniture, vacuum cleaners, and phonographs. Specialty goods are purchased by both men and women, but men's purchases of specialty lines are a larger proportion of the total sales of such merchandise than in the case of shopping goods.

For specialty goods the manufacturer's brand, the retailer's brand, or the general reputation of the retail store for quality and service stands out prominently in the mind of the consumer. It is because of distinctive characteristics associated with the brand or the store that the consumer is prepared to rely upon the service, quality, and prices of merchandise offered by that store as generally being fair and to accept the merchandise without shopping. In numerous lines of specialty goods, such as men's shoes and clothing, the consumer prefers to deal with a store offering an attractive variety of styles and sizes from which to select. Purchases are made by each individual customer at infrequent intervals. Consequently, a specialty store generally is located at a point to which customers can be drawn from a wide area.

From the manufacturer's standpoint, a specialty line calls for selected distribution, in contrast to the general dis-

tribution essential for convenience goods. The dealers who are to handle the specialty line must be carefully selected on the basis of their ability to attract the class of customers to whom the product will appeal. Retailers must be chosen who can be relied upon to use aggressive selling methods in attracting customers to their stores. Frequently, exclusive agencies are granted to retailers for the distribution of specialty goods. An exclusive agency is seldom, if ever, justified for any line which is not a specialty line. It is only in the marketing of specialty goods, furthermore, that manufacturers have found it practical to operate retail branches.

Because of the part which each individual retail store handling the merchandise plays in the sale of the specialty goods, the care with which these stores must be selected, and the methods of cooperation which are essential between the manufacturer and the dealer, specialty goods are especially suited to distribution by direct sale from manufacturer to retailers. The manufacturer of specialty goods who works out his plan of distribution systematically on this basis also often finds it advisable, through his national or local advertising, to assume part of the burden of focusing the demand on individual stores.

In case of several commodities, the articles tend to fall into more than one of these three categories. Staple groceries, for example, are clearly convenience goods; fancy groceries, on the other hand, are specialty goods. In each city there usually are from one to three stores which have a high reputation for specialties in groceries. Although these stores also sell staple groceries, their patronage is secured primarily on the basis of the specialties that they carry. Because of the limited market for such specialties and the volume of business necessary to justify carrying such a stock, ordinarily only one or perhaps two or three stores in a city can obtain enough business on these goods to warrant taking on a line of fancy groceries; in the same city, anywhere from one hundred to several hundred grocery stores are carrying convenience goods.

In the shoe trade, medium- and high-priced shoes for both men and women are specialty goods. Women's shoes which feature style novelties border on the shopping classification. The common grades of work shoes, on the other hand, border on the classification of convenience goods. The manufacturer of women's novelty shoes, for example, cannot advisedly leave the shopping institutions out of consideration in planning his sales program. The manufacturer of cheap work shoes, however, ordinarily must place his product in a larger number of stores than would be required were he selling medium-grade dress shoes for men.

Although women's ready-to-wear suits generally are shopping goods, a few manufacturers recently have been developing standard trade-marked lines, which tend to fall into the class of specialties. Several retail stores also have developed specialty reputations for women's ready-to-wear. In view of the conditions in the women's ready-to-wear field and also in several other fields, the average department store now seems to be faced definitely with the question of whether its merchandising should be primarily on a shopping basis or whether at least some of its departments should be developed on a specialty basis. The piece goods departments are likely to remain shopping departments. Shoes, men's cloth-

ing, women's ready-to-wear, furniture, silverware, and numerous other departments are being developed in several department stores as specialty departments, but generally without a conscious, well-coordinated policy for a store as a whole. In these specialty departments the emphasis is shifted from comparative prices and comparative styles to the special qualities and characteristics of the merchandise carried. In other department stores the merchandising is still almost entirely on a shopping basis, with the featuring of prices and bargains that are supposed to appeal to the shopper. In so far as department stores develop specialty departments, they will afford attractive outlets for manufacturers whose distribution otherwise would be through specialty stores.

Relation of Brands to Buying Habits

Convenience, shopping, and specialty goods are sold both branded and unbranded. Because of the differences in the buying habits of consumers in purchasing these classes of goods, brands do not play the same part in the merchandising plans for all three classes, and the advertising problems of manufacturers are quite dissimilar for shopping, convenience, and specialty merchandise.

A brand is a means of identifying the product of an individual manufacturer or the merchandise purveyed by an individual wholesaler or retailer. The real demand for any commodity is the quantity which consumers will buy at a specific price. If a product is unbranded, the volume of the demand ordinarily depends upon the quantity that consumers elect to buy, either entirely upon their own initiative or as a result of the sales efforts of the retailers by whom it is sold. When sugar was sold in bulk, for example, the demand depended upon the amount consumers wished to purchase or were induced to purchase by retailers who featured the article; sales were not directly stimulated by the sugar refiner. For an unbranded product, the individual manufacturer seldom can afford to assume the burden of stimulating demand which cannot be specifically directed to the product of his own factory. For such an unbranded product the manufacturer must rely chiefly upon his ability to produce cheaply, in order to be able to offer low prices, and he must pursue merely passive selling methods or, at most, direct his sales efforts chiefly toward wholesale and retail merchants. If the product is branded, on the other hand, the manufacturer can undertake not only to direct the active demand to his particular product, but also to arouse latent demand by stimulating a larger number of consumers to want his product or by making previous consumers desire to use more of his product at a specific price. When the American Sugar Refining Company, in 1912, for example, began to put out sugar in packages bearing the company's trademark, the company not only was in a position where it could inform the consumer regarding the merits of that particular brand, but it also could practically undertake to induce consumers to use more sugar, as, for instance, in canning fruit.

With the development of the package trade, the tendency during recent years has been for an increasing proportion of convenience goods to be branded. The increase in the sale of crackers in packages, for example, in contrast to the former bulk sales, has given greater significance to brands of crackers and has facilitated the use of aggressive sales methods by cracker

manufacturers. Among shopping goods there has been some increase in the number of brands, but large quantities of merchandise in this class still are sold unbranded. Specialty goods are all branded, except in a few cases where retail stores have reputations which practically render it unnecessary for them to have brands placed on the merchandise which they sell.

When a manufacturer undertakes to focus the potential demand upon his product with brand identification, he must consider the attitude in which the consumer ordinarily approaches the purchase of such an article. The attitude of the consumer may be that of: (1) recognition, (2) preference, or (3) insistence.

Consumer Recognition

When a brand has any significance at all, it serves primarily as a cause for recognition. If the consumer's previous acquaintance with the brand has been favorable, or if the manufacturer's or dealer's advertising has made a favorable impression, other things being equal, the recognized brand will be selected from among other unrecognized brands or from among unbranded merchandise. For some products—such as silk goods, ginghams, and women's suits—pattern, style, and price are considered by the consumer, before brand. When the selection narrows down to a choice between articles of this sort approximately equal in pattern, style, and price, the recognition of a known brand sways the choice. The manufacturer of such goods, however, cannot hope ordinarily to secure many sales merely because of brand, if his product is higher in price or less popular in pattern and style than directly competing goods shown in other stores.

Consumer recognition—an acquaintance with the general standing of the brand—probably is the only attitude toward that brand which the manufacturer of a typical shopping line ordinarily can establish in the mind of the average purchaser by means of advertising and sales efforts. If the product has some special feature, as, for example, cotton fabrics dyed in fast colors or fast-colored silk goods loaded with a minimum of tetra-chloride of tin, it occasionally is possible to arouse the interest of the consumer to a point of preference.

A family brand, by which is meant a brand or trade-mark that is applied commonly to a group of different products turned out by a single manufacturer, serves primarily to establish consumer recognition for all products in the group as soon as the consumer becomes acquainted with one article bearing the common brand. The experience of retail dealers indicates that for shopping and convenience goods the common brand aids in promoting consumer recognition. If it is a specialty line, the experience of the consumer with one article bearing the brand is likely to establish in the minds of consumers at least an attitude of preference for other articles bearing the same brand. It is unsafe, however, for the manufacturer to count upon the family brand to develop more than consumer recognition without the presentation of sales arguments for each article bearing the brand.

Consumer Preference

Consumer recognition soon shades into consumer preference. When several brands of merchandise, which are similar in general qualities and in external appearance, are offered to the consumer by a retail salesman, the one

for which previous experience, advertising, or perhaps the retailer's recommendation has created a preference, is chosen. The strength of the brand depends upon the degree of preference in the mind of the consumer. In purchasing convenience goods, for example, the consumer often approaches the retailer with the question, "Have you the X brand?" If the retailer does not have that brand in stock, another brand ordinarily is accepted by the consumer, or, if the retailer specifically urges another brand in the place of the one called for, a substitute may be taken by the consumer. This practise of asking for brands is common for many consumers in the purchase of convenience articles. The brand comes first in the consumer's mind and signifies to him the quality, style, or pattern of article, or the type of container that he wishes to obtain. In such cases the consumer has a preference for the brand asked for, but ordinarily it is not strong enough in this class of merchandise to make him insist on that brand to the point of visiting a less convenient store to make the purchase. It is because the consumer generally has merely the attitude of brand preference in purchasing convenience goods that it is essential for the manufacturer of such a product to place his wares on sale in a large number of stores in each territory.

Consumer Insistence

The third stage in which the demand for branded articles manifests itself is consumer insistence. When the consumer approaches the purchase of an article in this attitude of mind, he accepts no substitute unless it is an emergency. This attitude of consumer insistence holds commonly in the purchase of specialty goods. To warrant undertaking to develop this attitude, the product must be so individualized in quality, in its special features, or in the service rendered by the manufacturer or retailer as to differentiate it distinctly from competing articles and to induce consumers to put forth special effort to secure that brand. The manufacturer of an electrical washing machine, for example, undertakes to present his sales arguments in such a way as to lead the consumer to insist upon the purchase of his particular make. Through advertising, the manufacturer of such a machine seeks to convince the consumer that his is the machine which should be purchased and that a store carrying this brand should be sought out.

The difference between no standing at all in the mind of the consumer, consumer recognition, consumer preference, and consumer insistence is one of the degrees to which the selling process has been carried with the consumer before he visits a retail store to make his purchase. If the consumer has no familiarity whatsoever with the brand of product to be purchased, the entire sales burden rests on the salesman in the store visited. If the consumer recognizes the brand, the manufacturer of that brand has taken the initial step in consummating the sale to the consumer. If the manufacturer has established consumer preference, the sale has proceeded one step further. If the consumer has the attitude of insistence, it remains merely for the retail salesman to close the sale.

Marketing costs generally are high. One of the first steps to be taken by a manufacturer, who is seeking to effect economies in selling his product, is to make an elementary analysis of the habits of consumers in buying articles of the sort he is producing. The formulation of an effective marketing plan

must start with a consideration of the consumer; the next step is to adjust the plans of retail and wholesale distribution and the advertising program in accordance with the analysis of the buying habits of consumers among whom the market for the product is to be developed. This approach assures the maximum results from the sales efforts that are put forth.

BITUMINOUS COAL PROBLEMS

By C. E. BOCKUS

COAL has been in the limelight almost continuously since April, 1922. It also occupied the center of the stage in the fall of 1920; but was practically forgotten in 1921. During the past nine months more has been published and more legislation discussed for the coal business than even for transportation. These two great industries are inseparable, not only because the railroads use from a quarter to about a third of all the coal produced, not only because coal furnishes a far larger proportion of railroad tonnage than any other commodity, but because the amount of coal that is mined and not loaded into railroad cars is extremely limited.

Furthermore, the coal industry is basic to such an extent that coal production is affected out of all proportion to any decline in general business. With less manufactures less coal is required in factories and less transportation needed to move materials and products. That again serves to reduce the demand for coal since transportation uses close to 30 per cent of all the bituminous mined.

In the mind of the general public coal is divided into two classes—soft and hard, or bituminous and anthracite. Anthracite in material quantities is mined only in a small section of Pennsylvania and eight producers control almost three-quarters of the output. Bituminous coal is mined in substantial quantities—over 2,000,000 tons a year—in each of 20 states, although 5 states, Pennsylvania, West Virginia, Illinois, Ohio, and Kentucky, account for more than three-quarters of the total. The high mark for anthracite production was just under 100,000,000 tons and for bituminous about six times as much or 580,000,000 tons. Of the anthracite perhaps 55 per cent goes for domestic—that is, household—consumption, and of bituminous about 10 per cent, so that the domestic user takes directly in the year not far from an equal tonnage of anthracite and bituminous. The writer will consider bituminous coal only.[1] It is the foundation of modern industry, the fuel on which is dependent the greater part of our transportation and manufacture.

As in all business, there is a triangle of interests—the consumer, the men on the mine payrolls and the operator or mine owner. Each sees the many problems of the industry from his own angle and while all have certain mutual interests these are too often forgotten. Briefly, the consumer believes that he pays too high a price for his coal and, perhaps more important, he is not always able to secure it when he needs it most. The mine employee claims that his work is hard, dangerous, often performed under adverse conditions, and that his employment is not uniform.

[1] It is to be expected that there will be some exceptions that can be made to practically every generalization regarding bituminous coal. How can it be otherwise in the case of an industry representing an investment of $2,000,000,000 with over 7,000 enterprises (1919 census shows 6,636 but a world of little mines opened in the fall of 1920 and again in 1922), located in 28 states and with from half to three-quarters of a million employees? The census shows 583,608 in 1919.

The operator thinks that he is engaged in a hazardous industry, that he has too much competition and that he has been investigated and abused beyond all reason, frequently for situations over which he has no control.

There is truth in the claims of all three. The consumer remembers buying coal for $1 a ton, or less, at the mine only six or seven years ago. Prophecy is dangerous; but the writer ventures the prediction that dollar coal has gone the way of the $3 shoe, 10-cent gasoline, and one-cent newspapers. Each may come again, but it is doubtful. The consumer is told that intermittent railroad car supply forces him to pay higher prices for his coal and he often finds a supply from his regular source is not available when he wants it. He usually forgets that when his business was dull he failed to take all the coal for which he had contracted. Even if he has made a contract with a responsible producer and has taken his coal regularly, he is quite likely to find that when he needs his coal most the producer will be obliged to curtail shipments to him, claiming that contracts have to be prorated owing to a shortage of railroad cars. The consumer is then forced to purchase so-called "spot" coal. The same causes that force one consumer to augment his supply by purchasing "spot" affect other consumers and as a result there is a grand scramble for the limited amount of "spot" available. What is the result? Prices advance by leaps and bounds to double—yes, sometimes to five times—the contract price at which the consumer had agreed with the producer for a supply. This condition causes the great majority of the complaints against the industry by business men. It is almost useless to argue with a purchaser that restricted car supply prevents shipments in full on his contract when for a higher price, usually much higher, he can frequently obtain coal loaded in the cars of the identical railroad supplying the mine with which he has a contract.

The mine worker claims that even if his rate of pay per day or per ton is high the number of idle days forced upon him prevents his yearly earnings from being large. His work is dangerous and is often performed under very trying conditions. The operator knows that he is blamed for many conditions absolutely beyond his control. He knows that excessive competition in dull times forces his price below cost plus a fair margin of profit, often below cost itself. He tries to justify the taking of such orders with the excuse that his organization must be kept together, that mines must be kept running and that there is a responsibility upon him to provide working time for his men, even if he does not get back a new dollar for an old one. The latter is a real responsibility resting upon an operator whose mines are so located that it is practically impossible for his men to obtain any other local employment.

I

The increase or decrease of coal output depends principally on railroad car supply, the condition of general business, labor supply, and the so-called seasonal demand. The first three to some extent pyramid on each other. In times of active general business there is of course a greater demand for labor in other industries; but much more important, there is a greater demand for transportation, which usually results in a diminution of the supply of cars available for coal loading. When the demand on an operator is at flood, the facilities for the operator to meet that demand are too often at ebb.

The importance of seasonal demand in the bituminous industry, in the opinion of the writer, has been greatly exaggerated by those who with one form or another of legislation have suggested Congressional cures for the ills they attribute to the industry.[2] It is evident that if all consumers would take one-twelfth of their year's supply of coal each month and if the railroads would supply cars and move them with equal monthly regularity, the number of mines and miners in the industry could be reduced enormously. But why confine this to coal? How about water, ice, electricity, and gas? What would be the saving in the capital investment in power and light plants if there were no "peak loads"? How much could have been saved in the capital account of water supply systems if long periods of summer drought were not usually accompanied with high water consumption? Supposing retail stores were to work to their capacity all the time, could not many be eliminated? Is there anything which might not be stabilized to tremendous advantage in theory at least?

We hear on all sides that there is an enormous overdevelopment of coal mines—that existing potential capacity of mines is equal to double the consumption for 1922. It can be so proved with a pencil. According to statistics the average number of days worked in 1921 was 149 out of a possible 308. Production in 1921 was only 407,000,000 tons; at the same rate per day for 308 days it would have been close to 840,000,000 tons, about 160,000,000 tons over the maximum ever recorded in any year. An even larger total may be secured if one calculates annual production on the basis of a single important week in the year.[3]

That there is too great a mine capacity for present demand all will admit, but the amount of this overproduction depends upon too many doubtful factors for the writer to even hazard a guess. That the mines can produce more than can be transported is a certainty and all these estimates of potential capacity are based upon conditions that never have existed and probably never will exist at the same time. Admittedly at whatever figure

[2] Figures of one operation of good size over the past ten years show that the average production in the six cold months, October to March inclusive, were less than one per cent greater than the production in the six warm months, April to September inclusive.

[3] The week of January 20, 1923, 198,007 railroad cars were loaded. The average car supply at the mines that week was less than 55 per cent. With full car supply they should have loaded, therefore, 360,000 cars and if that is multiplied by 51 for the weeks of the year, allowing one week lost for holidays, you have 18,360,000 cars. Estimate the cars at 50 tons each and you get 918,000,000 tons, much more than double the actual output in either 1921 or 1922. You can select some other week and run what they call the potential capacity far above a billion tons by the same arithmetical methods. If these deductions are correct, there is far more than twice as much coal developed as is required. But does anyone in the industry believe that such figures of production are possible from existing mines other than on paper? In 1917 and 1918 the mines were urged to do their utmost in producing coal to help win the war. There were zoning and priority orders to help car supply and expedite movement. Men worked even on so-called national holidays, and tonnage per man per day was increased. The result was the record output of those years, 1917-18, and yet the maximum then attained was less than two-thirds of this pencil total.

It may be interesting to note in this connection how production has advanced in the past 40 years. In 1902 the total bituminous coal production was only 260,000,000 tons and yet that was practically double 1895 or any year prior thereto. The 300,000,000 ton mark was passed in 1905 and the 400,000,000 mark in 1910, the 500,000,000 in 1916. Now we find 1921 and 1922 dropping back to less than any year since 1911. Judging by the growth of demand in the past, would not normal for 1922 have been equal to or above the actual production of 1917 or 1918, even allowing for the development of water power and oil for fuel?

you put your potential capacity, it will be far above the consumption figures for the past two years. However, such a statement is equally true of a large number of other industries.

May it not be that the excessive number of operators is a more serious factor than too great a potential capacity? There is no monopoly, trust or working agreement in the bituminous coal industry. Out of, say, 7,000 operators you can count on your fingers the companies producing over one per cent of the total output, and I doubt if any company produces five per cent. The average for last year could not have been over 60,000 tons per operator or, perhaps, four cars per day. There can be no agreements for control within such an industry. A need exists for more consolidations, combinations and mergers that will help to prevent, to an extent at least, some of the abuses—and there are many—in the industry.

Overdevelopment of the mines is due to many causes: the desire of railroads whose stockholders are also interested in coal lands to build up freight tonnage for their roads; the efforts of coal land owners to enhance the market value of their property by opening mines to prove the coal contained therein; the attempt of the operators to increase their output, thus seeking to cut down overhead expenses per ton; the low average of coal prices making it in many years possible only for new low cost mines to show a profit; the introduction of modern machinery to speed up transportation within the mines themselves and increase the output per man; the limited amount of capital necessary to start a small mine, and the occasional spectacular profits made in such a venture. Spectacular profits almost without exception come to the smaller operator who has no contracts and operates only when prices are high.

It is a logical question—Do not these small operators who close on a low market and open on a high one help to stabilize the industry? If they continued to run in dull times, would not prices be lower? Second: if they did not open when prices advance, would not prices go higher? To the first the answer is "yes," probably the small operator by forcing his coal onto an over-supplied market would reduce prices to still lower levels. And remember, that as recently as early 1922, large quantities of coal were sold for less than the cost of production. In some instances contracts for a year were taken on which the operator was unable to make a profit. As to the second, high prices come only from a limiting of supply, either by a strike in the industry or failure of transportation. In the case of the great coal strike of 1922, the sporadic small operator was an assistance in securing coal that prevented a general tie-up of industry. In Pennsylvania, for example, the total thus produced was of the greatest value. Many of these operators had no trade connections, no contracts and no hesitation to sell their output for the highest price they could obtain. They had been closed since December, 1920, and knew they would be closed again when the strike was over. They had no responsibility for the future of the industry. It was their day of sunshine and they made hay. Furthermore, they did not go around urging buyers to pay them high prices. The buyers or their agents did the running, bidding against each other for coal as fast as it was loaded, and it was as difficult to control the buyers as it was the sellers. In other sections, notably the big producing fields that the United Mine Workers did not

control, the sporadic small operator, or "snowbird" as he is sometimes called, actually cut down production by placing too great a burden on transportation. It is self-evident that it takes much more motive power to distribute and gather and assemble into a train 20 cars from 20 mines than to handle 20 cars at a single mine that will load them all in eight hours. Therefore, in many fields as the small mines opened they reduced the car supply of the larger mines and production was actually curtailed instead of increased.

II

Railroad car supply and transportation may appear to be overemphasized by the writer. But it is the factor of prime importance in coal production, and therefore price. Let me tell the story of Kentucky which in 1922 produced close to 40,000,000 tons. Divide the year into three unequal periods: First, the first four months when there was a good car supply but relatively light demand for coal. Second, the next two months when car supply and demand (owing to the coal strike) were both good. Third, the last six months when the demand was good and the transportation facilities entirely inadequate.

	Period production	*Monthly average*
First period: Jan., Feb., Mch., April.	11,880,000	2,970,000
Second period: May and June	10,200,000	5,100,000
Third period: July to December * inclusive	17,920,000	2,985,000

* December tonnage estimated.

In September, with a keen market for all Kentucky coal available, the failure of transportation cut production in that state over 300,000 tons below that of January, when the market demand for coal was almost at the bottom of the ebb. Consider another example: a company not in Kentucky rated at about a quarter of a million tons per month output. Failure of its customers to take all the coal they had contracted for cut the output to 170,000 tons in January, 1922, and the failure of the railroad to supply cars cut the output in December, 1922, to 155,000 tons. The difference in output between the largest and smallest month of the year was almost 90,000 tons, a maximum output of 58 per cent above the minimum. Such a variation so increases cost as to eliminate the possibility of profit unless some coal is sold at a price that would be called profiteering. The curtailment also reduced greatly the earnings of the miners. The drop was equivalent to an average reduction in wages, presuming the same scale to be in effect on both months, of over $57 per month for every person employed by the company in any capacity. As many are employed on a monthly basis, that fact made the reduction to day- and piece-workers still greater. By this restricted running time the cost per ton of coal produced was increased at least 50 cents. The contract customer who was prorated to 60 per cent of his contract and was forced to purchase "spot" or, as he calls it, "bootleg" coal from other producers, at say, $4 per ton higher than his contract price found that his coal supply cost him $1.60 more per ton. All these angles of the triangle, therefore—consumer, miner, and year 'round operator—lost by this transportation failure that was absolutely beyond their control.

The stabilization of the coal business must be regarded from widely divergent points of view. The best efforts of consumers, operators, and miners must be combined in order to

improve conditions, although their efforts must be dependent on, and may be completely nullified by, a factor—transportation—which they do not control. What can the consumer do? Purchase his coal from reputable producers or their agents and balance the variation of his needs to as great an extent as possible by reasonable storage. Such storage must be at or near the point of consumption; storage at the mines is of little avail in assisting that one great problem, transportation. Admittedly all coal does not store successfully, particularly in large quantities, and coal storage requires space and money. What can the miner do? Work whenever the opportunity to work is given him and try to balance mine output by more regular attendance. The variations in mine loading with a good market and good car supply are surprising to anyone not familiar with the industry. The five-day week for coal loaders is more nearly the actual condition than it is a theory. While enjoying a good market and fair car supply, an operator can come close to telling the day of the week from the tonnage produced. The curve of daily production often looks not unlike the profile of one of those deep-toothed saws lumbermen use. What can the operator do? Obviously he should keep his equipment in such good condition that loss of tonnage from mine disability is reduced to a minimum. He should try to so balance his contracts as to get as much all-the-year business as possible. All these suggestions will increase the return to the operator and to the miner and yet will decrease the average price the consumer pays for his coal.

III

If some plan could be devised by which a regular contract shipper of coal had some advantage in his railroad car supply over a sporadic "spot" shipper and, therefore, contract customers over "spot" customers, it would help. Let us assume that "A" buys 10 cars of coal a working day from "B," shipped over the "C" railroad. All the year 'round business. It seems that he should be fairly entitled to better service in times of car shortage than "D" buying "spot" from "E" mine, and only in the market for transportation over "C" road at the very time the regular customers of "C" road are in most need of its services. The occasional passenger pays more than the monthly ticket user. It is admitted that it is proper for him to do so. The regular shipper might well be given an advantage in cars which would help to stabilize shipments to his customers. By encouraging steady runs, such a policy would help the railroads as well as the mines. Is such a suggestion too much like "assigned cars," that anathema of most coal operators? It has been the custom of many roads to "assign" cars for their own fuel supply; that is, place for loading at certain mines cars that can only be used for the fuel requirements of the road. This results in unequal working time. Mines getting "assigned" cars run possibly every working day while their neighbors, not so favored, may not average one day a week. Admittedly railroads must have fuel or no one gets coal. Why, then, it will be asked, should they not, in periods of emergency, commandeer or assign cars to be loaded rather than to commandeer, confiscate or divert to their own use coal that they are transporting for others? Personally, the writer prefers assigned cars in an emergency rather than the confiscating of loaded cars; but the majority of operators are unalterably opposed to as-

signed cars on account of the abuse that has been made of this power. The fact that the Interstate Commerce Commission has recently been holding exhaustive hearings on the question is at least proof that it has two sides. Beyond dispute, the assigning of cars has been abused and has created conditions of preferential car supply that are intolerable.

Another suggestion is that some protection should be awarded to railroads regarding their own cars. Some roads have enough cars to carry the coal produced on their lines with a reasonable margin, others are short of such equipment. In times of high demand originating roads find their car supply dissipated by the failure of connections to return empties. During the 1919 strike, for example, coal cars that were shipped under government order into the Middle West from the Southeast to relieve the fuel shortage did not all return home until 1921 when general business had slowed down to such an extent that there was a surplus of cars practically everywhere. The $1 per day charge that must be paid the owner of a car does not result in the return of empties in times of heavy demand.

Let me admit that the operator, too, is only human. Consider his temptations in the early summer of 1922. Based on the assumption of good running time—in fact, to assure it—he took contracts at prices so close to cost that a profit could only be obtained by rigid economy, and economy flies out the pitmouth with a car shortage. By June, as a result of the coal strike, the "spot" prices were from one to two dollars above the price of contracts taken in February and March. In July there was a car shortage in many fields that increased costs to far above the spring contract prices. There were cash bidders at from three to four times contract prices, for every car available and some contract coal did go on "spot" orders. The great majority, however, a surprisingly great majority, of operators continued to ship all they produced on their contracts and protested vigorously when not permitted to do so because of preferential or priority orders. New mines were opened or old mines were reopened by the bait of high prices, and this helped to decrease the car supply of the regular shipper and placed his contract customers in a position where they were forced to buy outside coal. We all remember what happened in July and August of 1922—a mad scramble, culminating in priority orders and ultimately in Federal and State Fuel Distributors. Not a priority order was issued without doing an injury or injustice to some one, and often the users who had been helping to stabilize the business, by making contracts and living up to them, found their supply diverted to some one else who had shown less business forethought. And the more honest the operator in living up to the spirit of the priority orders forced on him, the worse it was for his commercial customers.

Now why is it that the general public does not better appreciate the problems of the coal operator? And I include the legitimate selling agent, wholesaler, jobber and retailer, all of whom perform important functions for the producer and consumer. Is not one reason that the stage setting is wrong—the householder, the voter if you will, always having to pay the highest price? To him the price of coal is not what is charged at the mine, but what he pays for it delivered in his cellar. True he frequently demands a specially prepared size, the cream so to speak, but he

"pays through the nose" for it. Even making allowance for the fact that he buys in small quantities, his cost per ton is too high in comparison with what car-load-lot users pay. The following figures referring to coal sold from the same mine in November, 1916, and the corresponding month of 1922 to a householder and a factory located in the same town are representative. The householder bought lump from a retail dealer; the factory bought from the selling agent of the producer coal out of which the lump—five inches and over—had been taken. In 1916 the householder paid $5.70, the factory $2.97, this in both cases the delivered price. In 1922 the householder paid $11 and the factory $5.72. The increases in 1922 over 1916 were as follows:

	Householder	*Factory*
Coal at the mine increased	$2.70	$1.57
Railroad freight increased	1.10	1.10
Handling charges increased		.08
Retail dealer charges increased	1.50	
Total increase	$5.30	$2.75

Not a very great difference in the per cent of increase; but dollars and cents, not per cent, strike the always sensitive pocket nerve. In these transactions the mine only broke even on the coal supplied to the factory, while all the profit was made from the householder. From the viewpoint of the operator this might be considered a serious tactical blunder, particularly since coal has been brought so clearly into the political limelight.

While it is so easy to say coal producers are not efficient the contrary seems to be the case. If they had not been, few of them would have survived some of the long periods of depression. To cite a specific example, the writer claims that an operator paying the wage scale that Dr. Garfield set as fair in 1917, allowing 10 cents per ton royalty for his coal and setting up proper depreciation and reserves, who mined a ton of clean coal and loaded it into a railroad car in May, 1922, for a total cost of $1.42, was efficient. Some mines probably did even considerably better; but I am sure about this one. The mine was new and with good conditions; but still to go underground and bring to the surface anything at the rate of 14 pounds for a cent does not leave much room for extravagance and inefficiency. Compared with May, the December, 1922, costs at this mine jumped $1.03 per ton, or 73 per cent. Of that increase 62 cents was directly attributable to the advance in wages made in the unorganized fields, when the strike was settled by the payment of the maximum or 1920 wage scale for another year and 41 cents was due to short running time from lack of railroad cars. What control of either factor had the operator?

Mr. Ford, apostle of efficiency, is getting into the coal industry and is reported in the press to be suggesting to some industries that he is prepared to furnish coal at "an even price, regardless of market prices." There are thousands of producers who have always been willing to do likewise. Admittedly, since the Government took a hand in wage fixing, many operators wisely insist on a wage clause in their contracts to protect them against increases and to protect their customers in case of decreases. Without railway cars, however, they cannot deliver coal, nor can Mr. Ford. In all coal contracts between producer and consumer the element of transportation, which neither of them can control, is the most important factor. I do not want to be misunderstood as an antagonist or

critic of the railroads. They have had their own problems, more serious than those of the coal operator, with much criticism and little assistance. I do not forget that in 1921 many of them had to build additional side tracks to hold all their empty coal cars. Many of them were tremendously "overdeveloped" in car supply and motive power for the demands of that year. Some of them were asked on the shortest notice in the early summer of 1922 to handle the largest tonnage they ever moved, and in many instances it was an unusual or unnatural movement. Combine that with the strike of their shopmen and there should be no surprise at what happened. Admitting all that, it does not in the least change the truth of the statement that the fuel shortage of the fall and winter of 1922 has been due to a lack of transportation, not of coal.

The writer has said nothing of the great question of union or non-union mines. The latter have been of incalculable service to the country in the strikes of 1919 and 1922. It would be a calamity from the point of view of the consumer to have all mines organized.[4] One speaks of wartime wages as the peak; but in the coal industry there have been two substantial increases since the war ended—one in November, 1919, and a still greater one in August, 1920. This is the scale now being paid and that will continue until April, 1924. Operators do not suggest a return to pre-war wages in the coal industry. Such a level would be relatively far too low and the nature of employment in coal mines is such that its workers are entitled to generous compensation. Price levels, however, cannot be reduced without a corresponding reduction in costs, and high costs have helped to limit demand. Our export trade, for example, except to Canada, has almost disappeared—last year (1922) less than a million and a half tons—a mere drop in the bucket. Then, too, high coal prices have been the most effective arguments for developing waterpower and oil for fuel.

IV

The United States Coal Commission is now making an investigation of the entire industry. Already, February 1, 1923, they have made recommendations for increasing the storage of coal by consumers, for the continuation of the existing wage scale, and they have made statements in regard to the overdevelopment of the industry. Their findings, after a full and careful study of all the data that are being collected, may well be helpful. Their suggestions may result in practical assistance towards stabilization. But it is going to be difficult to make consumers buy and store coal when they believe there is a falling market, or to make producers sell for a lower price than they can obtain. It hardly seems possible, but it is a fact that in June, 1922, with the greatest strike in the history of coal in progress for two months, with constant warning from producers and from Washington of a shortage sure to come, customers curtailed orders or refused to buy because there was to be a freight reduction on July 1st averaging less than 30 cents per ton.

Most difficult of all will be the making of any general rules that will apply with equal effect and advantage to the

[4] Readers interested in the organization of labor and coal mines are referred to *A Survey of the Coal Industry*, a pamphlet recently published by Dr. F. C. Honnold of Chicago, who has for years been the executive officer of the Illinois Coal Operators' Association (a completely unionized field).

wide variations of conditions existing in 28 states. Dr. Garfield's engineering committee knew coal costs throughout the United States more completely than any other authority. The Garfield prices for each district were based on costs plus a moderate overage for profit. Even with that overage the committee realized that a certain proportion of the mines could not be operated successfully at the maximum prices established. Yet there was a variation in those maximum prices of over $2 per ton and no allowance whatever was made for the quality of the coal or its market availability. Even the principle of buying coal in the summer and storing it for the winter has some exceptions. Mines shipping to the lakes for the supply of the Northwest, for example, expect to take care of the winter supply of their local markets after lake navigation has closed. How about stabilizing under national rules, potato growing in Maine, Florida and Montana? Not a bit more difficult than making the same national regulations apply for producing coal in Pennsylvania, Alabama, and the State of Washington.

How great a burden has coal actually been on industry in the United States? Taking the census figures for 1919, the total value of all bituminous coal at the mines is given in round figures at $1,145,000,000. Charge against manufacture all coal for industrial plants, half of the amount that went to public utilities, half of what the railroads used, and all that was made into coke, and in round figures one gets $732,800,000 for the mine value of that portion of the total. The value of products of manufacture is given by the census as a total of $62,418,000,000 for 1919. The coal operator, therefore, could not have been a burden on manufacture in 1919 of more than a trifle over 1 1/10 per cent of the value of manufactured products. Government regulation almost always accentuates price control on account of the "political reaction"; but price—except, as I have tried to show, to the householder—is relatively unimportant as compared with the regularity of supply, i. e. transportation.

THE ELEMENTS OF INVESTMENT INCOME[1]

By ARTHUR STONE DEWING

TO the investor and business man the income on an investment may mean many things. If the money is invested in bonds it may mean the cash value of the coupons or the cash value after tax charges have been paid or yet again the net yield, including the amortization of the discount or premium. Thus, even in our daily conversation the expression has no uniformity of meaning. And when, to this confusion, are added the various abstractions used by the student of finance and theoretical economics, one sees at the outset that some of the difficulties encountered in analyzing investment income are due merely to a confusion of terms. There are other difficulties, too, which confound the issue—not the least of which is the understanding of just what constitutes an investment in the strict sense.

It has been pointed out many times that investment concerns itself with capital and that capital arises through saving; we know that saving represents merely the margin between production and consumption, both of the individual and of the race. A very considerable amount of the saved capital of society is used by the savers themselves, and in their farms, businesses, or private speculations. In a strict sense these savers invest their savings in their own enterprises, yet the final return that accrues to them is an indissoluble mixture of wages, interest on capital and capitalized rent, and a true business profit arising from their administrative skill and acumen. In order to narrow and simplify our problem the term investment is used in these studies to mean the placement of individual savings, however arising, in the hands of another party in return for a specific reward. This is expressed as a percentage of the principal. The other party may be a farmer, householder, merchant, or manufacturer; it may be a person, corporation, or government. The essential element of an investment, as the term is used here, is that it shall represent a particular contract between the owner of capital, who does not care to use it, and the user of capital who sees an opportunity to profit through its use.

Each investment, therefore, represents a specific contract between someone who has capital to loan and someone who is willing to pay a premium for its use. Ordinarily the borrower or user is engaged in productive enterprises and hopes to profit by its use. He is therefore willing to share his gain with the lender. It is this agreed-upon share—be it specifically called interest or yield or discount or dividend—that constitutes the individual investment income which we have set out to analyze in this study.

A man owning a bond of a railroad corporation, for which he paid par, $1,000, receives an annual interest pay-

[1] This is the first of a series of three articles dealing with the theory of investment. The succeeding article will treat of the exercise of business ability in the selection of investments so as to create a true business profit. The last article will treat of the relation between investments and the industrial cycle.—Editor.

ment of $60. We refer to this as the investment income. So also is the $45 discount to a man who purchases the note of a textile mill for $1,000 due in one year, or is the $70 dividend on 10 shares of the preferred stock of an industrial corporation. These sums represent the gross incomes on the various types of investment, but there is nothing on the face that explains why one is larger in amount than another or of what elements, if any, this varying gross income consists. Obviously there must be reasons for the variations in gross income of different investments, for, clearly, one principal amount of $1,000 is no more valuable than another.

We shall begin our analysis of the gross income on investment capital by calling attention to the nature of what may be called the capital market. This is the mechanism that adjusts the capital supply to the demands of its users. Capital, as stated already, arises through saving and these savings are either used by the saver or else let out to another at a price above what the saver believes he can himself earn with them. There is thus, continuously, a capital supply and a capital demand—and a price of capital.

It has been stated, quite often, that the supply of capital is directly influenced by the current price of it as agreed upon between lenders and borrowers, in the sense that the supply of copper or timber is enhanced or decreased by the current price of these commodities. This analogy, however, is not as true on the side of the supply of capital as it is on the side of demand. We cannot assume that if the current rate of return on invested capital is suddenly increased, the supply will be increased in any definable ratio. The supply of capital that directly affects the interest rate is only that portion of the savings fund which is not used by the savers but is offered in the market to satisfy the effective demand of other users. True, a considerable increase in the current interest rate may enhance the capital supply in two ways—increased stimulus to savings[2] and decreased utilization by the savers them-

[2] The simple fact that the impulse to save and the resulting quantity of new capital coming into the market is not altogether a direct function of the interest rate is a matter of some importance. A considerable amount of saving would always be done irrespective of any interest to be paid or promise of premium, merely because human intelligence recognizes the necessity of providing for days of famine during days of plenty, for the weakness of age during the strength of youth. During early economic periods this kind of saving was alone important because the fear of famine, want, and unprotected old age was far more powerful than any hope of gain through the lending of savings. This motive is still a very important one, and its contributions to the capital supply are not affected by the changes in interest rates—except as changes of interest rates affect other factors such as wages or profits.

As social and political conditions have become more stable through the extension of cheap transportation, the increase of the agencies of production, and the exhaustive division of labor, want and famine have ceased to be social problems—except in a country like Russia. The prospect of want and destitution, however, has continued. And now savings through savings banks, insurance societies and mutual benefit associations are probably unaffected—except in a very small way—by the interest rate offered the saver.

It is, however, true that in addition to savings for protection a considerable amount of savings come into existence primarily because of the hope of deriving an income from them. The proportion of saving for this purpose increases with the complexity of the industrial order and the stability of the social order. But of these savings the largest part, in my opinion, is immediately used by the saver in his household, his farm, his store or his factory. Only the smaller part of this saving is actually saved for the explicit purpose of being offered in the open market. In other words, only a small portion of the savings fund which is consciously saved in order to produce an income will be affected, in quantity, by the prevailing interest rate. That a rise or fall of the interest rate will have some effect is indubitable. Some savers will put in electric lights in their houses, or cellars in their barns if interest rates are three or four per cent, but will forego these improvements if the

selves—but the absolute result of these two ways may bring about an inconsiderable increase of the quantity of offered capital or it may bring about an increase so great that it bears no relation to the rise in the interest rate.[3] In other words the quantity of offered capital is not, as alleged by some writers, a direct function of the price of capital.

The intensity of demand for capital is, on the other hand, more sensitive to changes in interest rates. Changes in rates are more effective in controlling the demand for capital among the users and borrowers than the supply among savers and lenders. In fact a sudden increase or decrease in the demand for capital is immediately noted in a hardening or softening of interest rates; and if the new level of demand is long sustained the effect will extend from call money rates at one extreme to the yields on long term bonds at the other.

This effective demand for capital, reacting upon the available supply, is the underlying mechanism which determines the fundamental basis of interest rates the world over and at all times. The operation of this mechanism is simple. If into the otherwise staple and quiet market for capital is thrust a new and sudden demand—like the Government bidding for savings with which to conduct a war—and if at the same time there is no additional stimulus for saving, inevitably the new demand will enhance interest rates. But as interest rates rise the effective demand for capital, at the higher level, will be checked and a new point of equilibrium, a new balance, will be established. And the converse of this also is true. A sudden technical discovery in the arts might increase the production of important commodities without increasing the living costs. A sudden increase of the fund of new savings offered for investment would occur. Unless there is a corresponding increase in the use of savings by Government or by private enterprise interest rates will, inevitably, fall, for it follows as the day the night, that the greater the available capital, the demand remaining constant, the more the

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Footnote 2 continued from page 301:
money can be let out at seven or eight per cent. Some merchants will enlarge their stores from their own savings if rates are low but will lend the money to others if the rates are high. So that we are far from denying that the increase or decrease of the prevailing interest rate has any stimulating or retarding influence on the quantity of new capital offered for investment. We are merely denying that one is a direct function of the other—as specifically contended by some economists.

[3] The problem of the effective influence of changes of interest rates upon the quantity of new savings offered for investment turns upon the much broader question of the effect of changes of interest rates upon commodity prices, and the influence of these upon the intensity and direction of movement of new savings. If accompanying the fall of interest rates, there is a fall of commodity prices—as in the opening stages of a depression—merchants and manufacturers, having no purpose or stimulus to invest in their own business may actually offer a larger quantity of their savings for general investment than in the previous period of high prices and high interest rates; so that the anomalous condition arises in which the supply of investment capital actually increases at the time of falling interest rates. If, however, the general price decline is marked and precipitous, the same merchants and manufacturers might find that their savings, and more, are absorbed in adjustments of inventories and losses on receivables, so that they have no new capital to offer. And on the other hand with advancing interest rates and advancing commodity prices merchants and manufacturers might find that all their surplus savings could be profitably employed in their own businesses in spite of the lure of high interest rates. And the capital which they had previously withdrawn from their business and invested outside would now be used internally. As a result rising interest rates would accompany a decreased supply of new capital offered for investment.

Without going into further details it is obvious that the interrelation of the various factors is very complex, and generalizations regarding the effect of changes of interest rates upon the quantity of new capital offered for investment must be accepted guardedly.

price of capital declines. But as interest rates fall, in response to sudden increase of the supply of capital, men who hesitated to make improvements in their factories, municipalities which hesitated to extend their roads, will be led into making these improvements. These new demands for capital will represent additional elements of competition for the use of available capital and will consequently bid against other agencies for its use. As a result the downward tendency of interest rates will be stayed, and a new equilibrium established.

This process of adjustment, which we have described, and the conditions affecting the supply and demand of capital are world-wide in their influence and their effects. Were capital absolutely and perfectly mobile, the rate of interest would vary from year to year, or even from day to day, because the adjustment between the supply and the demand of capital would never be fixed and determined. It would be forever fluctuating according to world supply of savings and the world demand of savings. Consequently it is impossible to fix any constant rate of return on capital, no rate that is fair and just, even where little or no risk of loss is involved. During the periods of war when several nations are bidding for capital against each other and against private business, while thousands of workers have ceased to produce, and when industry, except that engaged in producing agencies of destruction, is stagnant, then the price of savings will be high. This is because the supply of new capital is small and the demand large. It has nothing whatever to do with the risk of individual investment. The current rate of return on capital might be double or treble what it had been in previous periods of political and industrial tranquillity; and this would signify nothing beyond an attempt on the part of industrial society to adjust itself to the new conditions, when savings are in extraordinary demand, by stimulating to a slight extent the motive to save, and inhibiting, as far as possible, any but the most urgent demands for capital.

This rate of return on capital as determined by the world supply and world demand for savings will be called hereafter the pure interest rate.[4] Theoretically, were capital perfectly mobile, the pure interest rate would be the same throughout the world at any one time or moment. But capital is not perfectly mobile. It is more easily invested near the locality where it is saved because a certain amount of inertia on the part of the lenders has to be overcome in order to attract savings from the center of origin to a different center of employment, and this inertia, irrespective of the risk involved, must be compensated for by a high rate of pure interest.[5] In thickly populated regions inhabited by

[4] It is merely a theoretical balance, as more fully described above, between the supply and demand of savings in general, without regard to individual investment and individual risk. It varies from year to year, from age to age, according to the balance determined by the volume of available savings and the uses of these savings. It may be very low as it was in the period of 1903 and 1904, after a long extended time of world peace, and after the introduction of many inventions leading to increased economy in the production and distribution of commodities. It may be very high, as it was in the years immediately following the Great War when, added to the enormous destruction of capital, there were extraordinary demands throughout the world for the rehabilitation of industry and national life. The pure interest rate moves in broad periodic cycles. Its course is influenced by the industrial cycle but is not necessarily synchronous with it. This relationship will, however, be discussed at length in the third article of this series.

[5] See next page.

thrifty townspeople, savings are apt to increase more rapidly than their employment in industry. Consequently, owing to this inertia, the rate of pure interest will be low. In a newly settled locality where all improvements are lacking and the thrifty have ample opportunity to invest all their savings in increasing the productiveness of farms and small mills, investment capital saved by the farmers will be lacking and the prevailing interest rates must be high to attract capital from outside.

Pure interest rate, as the phrase is used, has no reference to specific investments or specific lending contracts. It refers only to a kind of abstract or theoretical capital market where risk, sentiment, and individual judgment have no place. And just because all investments are contracts between particular persons or groups of persons, the lender is forced, in every way, to gage the risk involved in the individual investment. He must consider the moral fibre and the mental capacity of the person who solicits the use of his capital, and the social value of the enterprise in which it is to be employed; these factors have a very material effect upon the lender's confidence in the ultimate return of his capital. So that in addition to the pure interest representing a riskless price of capital, there must be an added premium to compensate for the individual risk; or, to phrase the same idea differently, to insure the lender against loss. And obviously, too, this premium will vary according to the apparent risk of the individual capital lending contract—the individual investment.

This second element, representing an insurance premium against the loss of the individual investment, is simply illustrated by the elementary principles of probability. If one should place nine white balls and one black ball in a bag,

[5] The primary cause of the difference in interest rates in different localities of the earth is a matter sometimes overlooked. It is quite generally overlooked by American and French investors who often confuse geographical proximity with security. During the years immediately preceding the collapse of the credit and investment standing of the securities of the New York, New Haven and Hartford Railroad, New England trustees were wont to console their beneficiaries who complained of the small return by pointing out that one could kick his heels against the railroad any time. This naïve observation rested on the implication that because the New Haven Railroad was near at hand, it was a sound and wise investment. The general presumption that somehow investment security varies with the distance from the source of savings, is common, but without foundation. Variation in interest rates in different localities is due primarily to differences in the balance between the ability of the inhabitants to produce more than they use together with the relative effectiveness of the motives of saving in the locality on the one hand, and the local effective demand for capital on the other hand. For if the former is small and the latter large, capital must be attracted into the locality by a relatively high level of interest rate.

There are many and varied influences which impede the easy flow of capital from centers where the supply of capital predominates over the demand to more distant parts where the demand predominates over the supply. Perhaps the first and most important is ignorance. The distant is fraught with unknown contingencies; the saver and investor is above all else timid. Then in addition there are a group of costs which increase the charges on capital brought in from afar. A colleague of mine has likened them to transportation charges. The honesty and ability of the borrowers located in another part of the country or in another political division must be carefully investigated; the laws of the distant place are not understood without some expense. The capital once placed in a distant locality must be continuously watched, usually by paid experts present on the spot. This is illustrated by western farm loan agencies which receive a commission from eastern investors for inspecting farms, placing the loan and collecting the interest. These impediments to the free mobility of capital, and the costs in overcoming them, are quite independent from the risks involved. A loan on an ancient but sterile farm in Plymouth County may be no more, nor any less, secure than a loan to an immigrant farmer in Northwestern Saskatchewan. The point is that distance from the primary centers of saving has absolutely nothing to do with the risk of the investment.

and draw forth a single ball, provided the operation is repeated a large number of times, the black ball will be drawn 10% of the times and a white ball 90%. Stating the matter differently, it is evident that if one man should penalize another the sum of ten dollars for every time the latter drew the black ball, but paid him one dollar at the time of each draw, the two would be even in the long run. In its broadest significance this merely implies that if the chance of occurrence of an event resulting in loss—death, fire, or accident—were certainly known (as the chance of drawing the black ball is certainly known) then the misfortune could be exactly counterbalanced by setting aside regularly a percentage of the loss represented by its known chance. This is the fundamental principle of insurance; it is, also, one may add, the theoretical basis upon which risk in investment can be estimated. For if loss of principal through failure of the borrower to repay—an ever present condition in every individual investment contract—were calculable on a percentage basis, then one would merely have to add this percentage to the pure interest rate to obtain a gross income from his investment which would not only include the fundamental pure interest but also a sufficient premium to compensate, in the aggregate, for any loss of principal. The pure interest rate would be increased or "loaded" by an amount that would, when the premium on all his investment income is considered in the aggregate, exactly replace the losses of principal.[6] The absolute net return would be exactly the pure interest.

This exposition may be made clearer by a single concrete example. Suppose, for the moment, that the current rate of pure interest is four per cent. In this case money would be lent without reference to taxes, or risk or sentiment for four per cent. Now suppose that an investor is certain that in a given industry exactly one enterprise in every fifty fails during each and every year. Nevertheless, he is willing to lend money to various corporations engaged in the industry—fully conscious of the fact that the investment in one out of every fifty will prove a total loss. But obviously he will demand a higher interest rate than if he is lending capital to an industry in which there is only one failure out of every hundred or one out of every thousand. In other words he will require higher interest return, the greater the probability of loss of principal. And, moreover, in the case just described, he will require that the addition or increment of income above pure interest obtained from all loans in the industry shall compensate him at least for the loss of principal in the case of the one unfortunate investment out of the fifty. That is, if he makes a loan of $1,000 to fifty different corporations engaged in the industry, the investor will demand, in addition to the four per cent of pure interest, an amount which, in the aggregate, shall exactly compensate for the loss of one of the fifty loans, namely, $1,000. And assuming that the interest is paid in advance, and neglecting the compounding of interest, this premium will amount exactly to two per cent. This is the payment for risk, the premium or insurance against the loss of principal. It indicates, in

[6] In all this discussion I am presuming, for the purpose of simplicity, that we are dealing with loss of principal only, not the interest on the unfortunate investment as well. This is the same as assurance that interest is paid in advance. If the danger of loss of interest is considered in addition to loss of principal, the insurance premium should be slightly larger to offset this slightly greater risk.

the present illustration, that of the six per centum gross income received by the lender on loans to these fifty corporations four per centum represents pure interest in the sense of the price of riskless borrowed capital, and two per centum represents the insurance premium levied on all the loans to compensate for the probable losses on some. In other words, gross interest as we know it in business and investments consists of at least two components, pure interest and compensation for risk.

Other illustrations may be added without limit. The significant part of this analysis, however, is very simple. Every investor, consciously or unconsciously, weighs the relative chance of loss of principal attendant upon every prospective investment. And every investment, in its yield, as evidenced by its current market price, carries a certain risk premium, over and above pure interest, which is the investment market's appraisal of its chance of loss. Supposing—which certainly is not true—that this premium above pure interest carried by all investments represents accurately the true chance of loss of every one of the investments offered to the investor, and supposing, too, the fund to be invested is large enough to include a large number of single investments, then under these conditions the net return to the investor would be exactly the pure interest. The excess of risk premium above pure interest would exactly offset the losses of principal. There would be no enhancement of principal, no loss of principal.

Certain presumptions have been made in this discussion, in order to lay bare the theory without undue limitations. But it is perfectly obvious that no investor can determine accurately the absolute value of the risk of a prospective investment in the same manner that the life insurance actuary can compute the death rate per thousand of population or even the fire insurance expert can schedule or "rate" his various hazards. The judgment of the investor must be, of necessity, little more than an intelligent guess. Sometimes, by reason of the fact that the great majority of investors overestimate the risk of an investment, the premium above pure interest demanded by the investors and paid by the borrowers will be greater than it actually is. Consequently, if investments of this character are bought consistently by an investor he will receive a kind of supplemental premium—a kind of straight profit—due to his judgment or business ability in picking those investments which carry a premium larger than the absolute value of the risk. In brief, such an investor receives a total or gross investment return greater than both pure interest and the actual risk-premium, because of his skill in picking investments which carry a greater premium than their risk requires. Conversely, one may add, certain investments, because of sentiment, age or the laws carry a premium less than their inherent risk involves. The investor is not compensated adequately for the probability of loss. And if such investments are acquired consistently the loss of principal will not only absorb the risk-premium but some of the pure interest as well. It is obvious therefore that the sum of the pure interest and risk premium, in any individual instance, is either increased or decreased by an increment representing a straight business profit or loss varying with the skill or lack of skill of the investor in the selection of his investments.[7]

[7] See next page.

These three factors or elements, then, constitute the gross return of an investment. There is the pure interest on the capital, representing a kind of absolute market determined by a balance between what the savers as a class can get, and what the users as a class can afford to pay for the use of capital. But as all investment involves a special contract between saver and user, as loss of the individual investment is an ever-present possibility, the fundamental pure interest rate must be increased by a premium to counterbalance and equalize the individual investment losses. And, finally, as the determination of the probability of loss in any one case cannot be determined accurately the actual premium for risk cannot, in any given case, be more than an intelligent guess. Therefore, there is a kind of business profit, analogous to all other business profit, that accrues to the able investor who secures an investment having a risk premium greater than the actual risk turns out to be, or a business loss to the man of inferior judgment who buys an investment having a gross return in which the risk premium is less than the actual risk.[8]

[7] This analysis of investment return has its analogy in insurance. It is known by all actuaries and statisticians that the insurance of certain classes of insurable lives and properties is consistently profitable to the company. In other words the premium charged is greater than the hazards warrant. In the long run business of this kind yields the insurance company a true business profit, a true return on the business ability of the insurance company in selecting an unusually desirable class of business. And conversely it is also known and acknowledged that certain other classes of hazards yield an inadequate return to the company; as a class the premiums collected on them do not compensate for the losses. Obviously the insurance company is called upon to exercise true business ability in seeking out the former class of hazards and avoiding the latter. A life insurance company seeks to insure men of moderate means engaged in protected sedentary occupations, and it may avoid men over six feet in height although physically sound; a fire insurance company may seek suburban middle class residential houses and avoid farm building hazards of any description. In the selection of the type of business that it regards as most profitable the insurance company will be governed by its own experience, rather than by the widely known expectation of life tables or the commonly accepted schedule ratings. In other words, scientific as the insurance companies believe their computation of class hazards to be, they recognize that true business ability may be exercised and a kind of special or extra business profit obtained by directing their efforts toward certain kinds of hazards and avoiding other kinds.

[8] This analysis may be represented by a very simple notation. If "g" represents the gross return on any investment, "p" the pure interest rate then prevailing, "r" the compensation for risk, and "e" the profit or loss due to individual business judgment, then $g = p + r \pm e$

THE PLANNING AND PREPARATION OF AN ADVERTISING CAMPAIGN

By H. K. McCANN

THE huge scale on which business is conducted to-day in this country is the outgrowth of the last fifty years. Big business dates from the Civil War. The building of transcontinental railways and the development of the Middle West from a strictly agricultural, even frontier country, to a great industrial section inaugurated a totally new era in business.

The one-man business has largely disappeared. In place of the expert shoemaker, who took pride in making every part of the shoe himself, there came factories where whole groups of men and women did nothing but cut uppers or stitch on soles, where shoes were manufactured for the millions according to standard lasts. The individual shoemaker saw the world suddenly expanding before his eyes, and he either became a manufacturer on a big scale or was swallowed up by somebody else who was better able than himself to grasp the opportunity.

With the multiple complexities of conducting business on this new scale, more efficient methods of selling as well as of producing were a necessity. It might be argued that here is where advertising as a sales method came into being—that just as civilization brought shoes to protect our feet against the roads, and then pavements on those roads to make traveling easier, and again rubber heels on our shoes to make the pavements bearable, so advertising resulted from the increased scale of production and the consequent need of reaching masses of people quickly with the news of our wares.

This is only partly true, however. Advertising is as old as buying and selling and has been practiced in one form or another for centuries. In medieval days a merchant would despatch a servant around to his best customers to acquaint them with the fact that his master had just received a new consignment of silks from the East. That was advertising. When the first printing press was established, and it was no longer necessary to depend on the slow word-of-mouth method, handbills announcing bargains of all sorts were in general use. That was advertising too. Now we use double-spreads in the Saturday Evening Post, which reaches more than two million readers every week. Advertising again—on the modern scale.

About the time this great industrial and commercial expansion began, advertising had fallen into low repute because it had been used so extensively by patent medicine mongers and the circus man. People believed all advertising was bogus just because the bearded lady was a fake.

Nevertheless the *power* of advertising was obvious. Even with production accomplished on a wholesale basis, manufacturers began to see that large profits could be made only if means could be found for distributing goods widely. And the public must know that goods were available, else there would not be demand for them. Thus was

advertising *resurrected* from the ballyhoo stage and put to work in the interest of truth and honest merchandise with such success that to-day a manufacturer would hardly think of attempting to launch a new product without it.

Of course, ballyhoo is not extinct. And perhaps it has its uses. As P. T. Barnum, the very Prince of Humbugs, pointed out, it may not have done any great harm to fool people about the bearded lady when you threw in a whole lot of other curiosities that were genuine enough but less spectacular to talk about. At any rate, publishers of detective stories and the like use it to advantage. M. Coué, the great exponent of autosuggestion, chuckles over the bread pills he used to sell in his pharmacy and which cured the entire neighborhood of most of its ills; and even the modern press agent cannot forbear to announce his newest movie as the most dazzling, the most stupendous, the most expensive-to-make picture of all times! But, after all, these things belong more in the realm of make-believe.

Modern business is engaged in producing concrete things, chairs, dishes, food products, automobiles, machinery, tools, soap—everything the individual needs for his daily life. There is little opportunity for one's imagination to run riot with a familiar commodity like a loaf of bread. When it comes to detective stories, people wish to be diverted, amused, stimulated, taken out of themselves and their ordinary routine of life—but about bread, they want the facts.

This brings us to the real truth about advertising—that it depends for its success upon knowing the product, the market, the competition, the needs and desires of humanity. Not until all of these factors are studied and weighed and understood in their relation to each other, can an effective and successful advertising campaign be conceived and put into execution.

In general, advertising to-day is a great educational force. People cannot be expected to spend money on a product because it has intrinsic merit. In fact, who knows what intrinsic merit is? Comparison offers almost the only basis on which it can be determined. People probably will not recognize the value of an article unless they are taught to recognize it, to understand how it works, to appreciate what it can do for them. This is exactly what advertising does. It explains. It dissects. It compares. It teaches. It praises. It educates.

There is plenty of evidence that people read and believe advertising, evidence manifested in a general way by an increase or decrease in sales of advertised goods, but more specifically by other circumstances. For example, the mail received by one of the greatest beauty editors in the country, mail which runs into thousands of missives a week from women and girls everywhere, is full of letters which unconsciously quote extracts, and even paragraphs, from current toilet goods advertising. A certain publisher, who sells general books on a mail-order plan, has found that in writing to his company his customers, without appearing to realize it, will use again and again the very words and phrases he used in his advertising.

The work of preparing any specific advertising campaign varies with the conditions which are encountered. You may have a new product to launch—a product that must be sold to the jobber and the retailer as well as to the consumer. You may have an old, well-distributed, thoroughly known product,

whose sales need stimulating. You may have only to continue a campaign to sustain demand for a product whose market and whose sales volume are all that may be desired. The forms which your campaigns may take are as many and varied as your objectives. Sometimes conditions are such that both the objective and the method of accomplishing it are clearly indicated. Usually only the objective is apparent, and long and careful study of the product and the market is necessary to evolve the method by which the objective can be attained.

The importance of analyzing both product and market cannot be overestimated. Experience is a great aid, but research is also necessary. Modern advertising agencies usually employ a staff whose sole business is gathering knowledge. The product is examined carefully. How is it made? How well does it fulfill the purpose for which it is made? Is the product, or the package containing it, attractive in appearance? As much similar information as possible is secured about competitive products. Also, a careful study is made of the market and its possibilities; sales outlets; methods of distribution; prices and discounts given the wholesalers and retailers; amount and character of the advertising support being put back of products of a similar kind—in fact, all factors that have a bearing in determining the advertising or marketing policy to be followed are studied and analyzed.

This search for knowledge leads into all sorts of paths and may consume months of time. It may include the examining of government and trade reports and statistics; the delving into history for general background material; even scientific experiment in medical or food lines, for example; accurate, first-hand contact with enough of the people who will sell and buy your product to give a fair average picture of trade conditions and consumer buying habits. Advertising is intimately associated with actual sales work and conditions to be met in the market. With all the facts before us collected, tabulated, and analyzed, we are equipped to prepare the advertising plan. Though it sometimes happens that an advertising agency is privileged to make suggestions with regard to production matters, formulas, packages, etc., we will assume that we are dealing with a product whose quality and adaptability for the market have already been settled.

The market objective receives our first consideration. For every product there exists a market on some scale, however small. This market is easily reached. Nearly always there is a second or potential market. The size and scope of this bigger market is determined by the nature of the product and is revealed through the facts which we have already been at some pains to learn by investigation and research.

After determining the possible market, the second step in working out the plan is to develop the advertising appeal. By advertising appeal is meant the particular theme or line of reasoning which is to run through all our advertising and which is depended upon to create a desire to buy in the minds of readers. Our appeal must be something both fundamental and special to our product. It is not enough to talk about "health appeals" and "appetite appeals" and "beauty appeals." These might be applied to almost any product. What is needed is the particular special application of one of the general classes of appeal which gives our product dis-

tinction, uniqueness, a place all its own. Advertising is profitable in proportion to the individuality of the place it creates for its product, though it goes without saying that an advertising idea must be sound and in keeping with circumstances—for an idea can be "interrupting" and spectacular and still not have the power to accomplish the desired end.

To work out this advertising theme is frequently the most vital—and the most difficult—part of the plan. Actual choice of media and preparing of copy, art work, etc., follow naturally and easily from it. Its success depends on a knowledge of the vagaries of human nature, on timeliness, on novelty, on factors which are variable to some extent. One big agency employs a nationally famous psychologist just for his counsel in the planning of advertising appeals. For, in the last analysis, advertising is appealing to people, and it is imperative to know human nature. It is thought by some that volume, quantity, of advertising is the secret of success. This is not the whole story by any means. You must talk loud enough to be heard, to be sure, but it does you no good to raise your voice if people do not understand your language.

The germ of this important advertising and sales idea probably lies somewhere in the mass of material assembled in the research which precedes the making of a plan. A glance at current advertising which is known to be successful will disclose this. Three thousand years ago Cleopatra used palm and olive oils for her complexion. That idea came out of history. Yeast is being sold for its vitamin content. That idea came out of scientific experiment. Plain mud, messy to apply, uncomfortable during the process of application, is being sold as a facial beautifier. That idea came out of a sound piece of human psychology—women, and men too, will go to almost any lengths to improve their looks. A multitude of kitchen devices are sold as labor-savers. That idea came out of the increasing shortage of servants. The underlying principle of any successful advertising plan can probably be traced to an idea that now seems simple because familiar, but which once was laboriously dug out of a wealth of data.

When the advertising theme is finally developed, the third step in the preparation of the plan includes exhibits which show the actual working out of this theme in sample advertisements and dummies of all advertising material. Even after the advertising theme is determined upon, skill and talent are required to translate it into its final form. The presentation of an idea can go a long way toward making or marring it. A mediocre idea can be bolstered up with good writing and interesting art treatment. An outstanding idea can lose much of its effectiveness through careless treatment. For purposes of execution in a plan, samples of copy and art treatment are more a rough illustration of what can be done with the idea than finished pieces of work as they will eventually appear before the public.

Since physical appearance of the exhibits is governed somewhat by the kind and size of space to be used, it would not be amiss to point out here the relationship of the selection of media, which is a subject closely interlocked with the market objective, and the advertising theme.

The contemplated campaign may be local or sectional, necessitating special consideration of the more strictly local advertising media, such as newspapers,

car cards, outdoor signs, elevated or subway platform posters, theatre programs or any one of many other local media. Or it may be one of national scope, in which case consideration will be given to national periodicals of wide circulation. Or, again, the market we wish to reach may be among women entirely, and the women's periodicals will naturally head the list. Decisions as to the units of space in all these media depend again upon objective and method of handling the advertising theme, as well as upon the size of the appropriation available.

Counter display material, window trims, dealer broadsides, folders, direct-by-mail matter also come in the general classification of media. Each has its proper place and its special merit depending upon circumstances.

The plan includes a complete list of media recommendations with a summary of costs of the advertising space and the supplementary direct and miscellaneous matter.

This advertising plan represents the complete preliminary preparation of a campaign. After it is discussed and altered—for modifications are bound to take place—the real work of launching the actual campaign begins. Advertising space must be reserved and final advertising must be created and approved and released.

The making of interesting and effective advertisements requires copy and art skill of a high order. Many advertising writers are highly skilled specialists. Many well-known authors can and do write advertisements. The skill that a writer employs to create a plot, to delineate character, to picture scenes vividly, to present argument logically, to hold the reader's interest and attention, is needed in writing advertisements as in writing articles and stories.

The advertisement writer is like the lawyer pleading his case in the very best way that he can. He may make use of logic and sentiment and pathos and humor. The advertisement may appeal to pride, or the snobbish instinct, or to vanity, or to patriotism, or to love of home, or to dozens of other human traits. The advertisement writer must use every known means of reaching his audience.

Artistic treatment of advertising requires similar skill. The advertising business has developed and supports a great many first-class artists. Many of our nationally known artists were developed in the advertising school, and many of them still make pictures for advertising use.

Advertising should be completed sufficiently far in advance to be merchandized to the trade, i. e., shown to retailers and wholesalers as evidence of the time, money, and effort being spent by the manufacturer as his part toward inducing and stimulating sales. Whatever advertising work is undertaken, unless it be mail-order advertising, it must be very closely coördinated and synchronized with the work of the sales organization. The full effectiveness of the advertising is seldom realized unless it is designed to operate in harmony with the sales plan and unless the sales force works with it and makes the most out of it. This close coöperation between the selling force and the advertising is highly advantageous to all concerned.

For example, if dealer broadsides are included in the advertising campaign, they must be mailed to the trade at timely intervals. If dealer literature has been prepared, such as window trims, counter cards, store hangers, folders, package enclosures, etc., every dealer must receive his share while it

is new, fresh, and will tie up with the main advertising. If the salesman is using a portfolio outlining the scope of the advertising work being done, he must use it effectively, be in sympathy with the advertising, and thus be in a position to convince the dealer that it will help move his goods.

As a matter of fact, dealers in all kinds of merchandise have come to appreciate the power of advertising. What the dealer wants is customers. Show him that advertising is influencing his customers, and he will add his selling effort to yours to push your products. This link is most easily forged by a selling force that has been taken into your confidence concerning advertising plans.

A sales campaign and an advertising campaign are interacting. Lack of complete sales support of the right kind, in the right place, at the right time is as detrimental to the advertising as an inferior or incomplete advertising campaign is detrimental to an aggressive sales plan.

To go back for a moment and give a brief summary, the planning and preparation of an advertising campaign includes:

1. Intensive study of the product
2. Investigation and analysis of the market
3. Determination of the plan covering
   (*a*) The advertising theme
   (*b*) The copy and art treatment
   (*c*) The choice of media
   (*d*) Estimates of cost
4. Actual execution and release of the advertising in its final form
5. Selling the advertising to sales organization and the trade

The foregoing is an outline of some of the things which transpire in the planning and preparation of an advertising campaign. As was mentioned in the early part of this article, there are many kinds of campaigns planned for many different purposes. Each has its problems, each requires its own diagnosis before plans are made or treatment applied.

Advertising has not become an exact science, but the substitution of more scientific methods for the hit-or-miss way of doing things, which until recently has very generally prevailed in advertising practice, is a great step in advance.

THE FIELD ORGANIZATION OF THE SALES DEPARTMENT[1]

By HARRY R. TOSDAL

THE manufacturer who extends his selling operations into a market beyond his own immediate vicinity soon learns that the control of marketing is much more difficult than the control of manufacturing. Instead of overseeing workers under one roof, he must direct the operations of a group of men of various ranks and degrees of ability scattered over a section or a country, or perhaps over the entire world. In the past, members of the sales organization traveling in the field have ordinarily been subject only to long-distance supervision. Printed matter, letters, telephone and telegraph, with only occasional visits of officials, were depended upon to keep the sales force operating smoothly and efficiently. To-day a well-defined tendency toward more careful supervision is developing. Progressive-minded executives are studying closely the problem of increasing profits by increasing the amount and quality of supervision of field forces and not a few of them have already begun to reap the benefits of the more economical combination of supervision and direct sales effort.

Whether the field organization consists of merely a limited sales force with no supervisory officials or an elaborate system of inferior and superior branches, division and district offices, with hundreds of salesmen, the efficient performance of the selling function is in most cases the prime purpose of the field organization. Nevertheless, there are other functions the performance of which has frequently been partially responsible for the development of the field organization. One of these is the desire to develop closer contact with buyers, a policy which occasionally leads to the use of field organization to replace one or more types of distributors. Not a few firms have found that an organization in the field was advisable for the purpose of carrying stocks to meet the requirements of customers for economical and prompt delivery. A powerful motive for the extension of field organization influences manufacturers of more or less complex products which require expert service in installation, maintenance, or repair.

It may seem somewhat paradoxical to assert that supervision of the sales force is generally inadequate in amount and lacking in quality, while pointing out at the same time that business enterprises have not infrequently been severely handicapped financially and even thrown in to receivership by undue extension of their field and branch organizations. The temptations to over-extension of the field organization are particularly seductive to the optimistic sales executive, when he becomes aware that the salesmen traveling in territory a thousand miles away as representatives of the sales department are not making a satisfactory showing, either from the

[1] The management problems involved in the operation of branch sales organizations will be taken up in a second article in which the practices of manufacturers with respect to such matters as credit administration, control of inventories, and management of branch personnel will be discussed.

viewpoint of immediate sales or from the viewpoint of building up a basis of good-will for future profitable business. When the sales executive becomes dissatisfied with the attitude of dealers toward his product—an attitude of indifference which is often a logical one; when the manufacturer learns that, either because of lack of stock or dealers' refusal to handle the goods, his product cannot be procured by prospective customers in whom demand has been aroused by advertising; when through carelessness, inability or unwillingness of dealers to render necessary service in the sale of complex products, complaints arise and ill-will toward the manufacturer is engendered; when local competition becomes keen in sections of the market, possibly far distant from sales headquarters, then the lure of the extensive field organization becomes particularly dangerous. The executive sees around him many examples of concerns with large branch organizations which are notably successful, but he overlooks the fact that only successful organizations survive as examples. The numerous unsuccessful attempts, the many unprofitable branches carried by more profitable portions of the larger enterprises, receive little publicity.

Despite the dangers of branch organization, the development of some sort of field organization becomes a problem for all except the small local manufacturer or the firm which shifts its marketing functions to a selling agent. The development of sales supervision frequently, though not necessarily, brings with it the development of sales offices and field headquarters of the sales organization. The size and character of these field offices will vary with the number of salesmen and the extent to which selling and other marketing functions are decentralized and accordingly directed in part by field officials.

I. Field Supervision of the Sales Force

That salesmen operating in the field need supervision is evident if one examines in more than cursory fashion the nature of their work. The traveling salesman must ordinarily operate away from home or district offices a large part of the time. He has, therefore, a much smaller amount of contact with other parts of the sales organization than employees with corresponding responsibilities in the production organization have with production officials. Furthermore, the nature of the salesman's work—meeting new buyers, continually meeting persons who rightly or wrongly feel that their interests are contrary to his own, the frequent lack of tangible results for considerable periods of time, the dependence of the salesman's work upon factors beyond his control, the many new problems which arise because of changes of conditions, the difficulty of meeting new or hard prospects—furnishes arguments for support, assistance, and supervision by superiors. The character of the salesman, the fact that he will usually be most successful when optimistic, the many reasons for discouragement in selling, the tendency of salesmen to get into a rut when a fair amount of custom has been established further emphasize the need for some means of stimulation so that the salesman may do himself justice. The need for effective agencies for stimulation of salesmen is never more keenly felt than during a period of depression when the continuance of manufacturing operations may depend largely upon extraordinary exertions of salesmen. Lastly, few salesmen are fully trained for their work before they

take up selling. As a consequence, many houses are suffering more or less from the employment of inadequately trained salesmen. Even where salesmen have once been trained, their tendency to become satisfied with mediocre performance or the failure to grow may cause them in the course of time to get out of touch, to fail to appreciate new lines, to inadequately support new policies. In larger or smaller measure, a continuous process of education is needed to keep the sales force as efficient relatively as other parts of the sales organization or as other portions of the business enterprise.

The amount of supervision which must be provided by the management will depend upon a number of factors, the first of which is the size of the sales organization—the number of salesmen or other representatives in the field. A sales department traveling 500 men must very evidently provide more supervision than one traveling 20 men, other conditions being substantially the same. An examination of the practices of business concerns generally shows a wide variation in the number of men supervised by a single official. Instances may be cited where as many as 200 salesmen are directly supervised by one official; many more examples may be secured of companies in which 25 or more salesmen are subject to one supervisor. While we find that only a very few sales executives have undertaken a serious study to ascertain the number of salesmen which can be effectively handled by one man, such results as have been obtained point toward the conclusion that present practice will have to be modified to provide for more supervision. The variation which exists is to be attributed not so much to differences in need for supervision as to varying distribution and control, to the undeveloped state of policies of many enterprises, and to the lack of study of supervision problems.

In the second place, the amount of supervision will depend in part upon the territory in which salesmen operate. As soon as salesmen get so far away from headquarters that contact with the home office can be maintained only by correspondence and occasional visits of men from the headquarters staff, there is danger that they will not perform so satisfactorily as in territories closer to sales headquarters. Special features of the salesman's work may increase the need of supervision in order to overcome certain weaknesses of the average salesman. Closer supervision is necessary where salesmen are expected to cover territory thoroughly than where they are expected to visit only certain customers in larger market centers. Likewise, the special work which a salesman may be expected to do in the creation of good-will, in aiding dealers to resell goods, may call for a greater amount of supervision than for the salesman who is expected simply to obtain orders with no responsibility for laying the basis for greater facility in making future sales. It is evident also that the extent to which such special duties are required will depend upon the type of product, upon the class of buyers, and other factors.

Lastly, the characteristics of the salesmen employed will affect the amount of supervision necessary. A company employing many salesmen of average ability may find supervision more necessary in proportion to numbers than another company in a different line employing highly trained and high-grade salesmen. The importance of this difference may, however, be easily exaggerated.

The necessary supervision cannot be furnished properly by the chief sales executive himself, unless the number of salesmen is very small and unless his other duties and responsibilities are light. Supervision of the sales force is only one of the many functions of the sales executive. If, as a number of executives contend, 8 to 12 men will occupy the full time of a supervisor, obviously a sales manager who attempts to properly correlate advertising and personal salesmanship, who attempts to plan so that the sales department's functions coordinate properly with the other departments of an enterprise, can perform none of these duties properly if he is compelled to supervise a considerable number of men. Only by delegating some of these duties to responsible subordinates can a sales manager free himself from detail so as properly to direct sales operations in their entirety. Proper supervision for the sales force implies not only desk supervision, which is not infrequently the only type which can be furnished by the sales manager or his assistant, but also field supervision. As sales organizations expand there is, of course, clearer recognition of this necessity; but, even in smaller organizations, greater efficiency would undoubtedly be secured if active field supervision were furnished.

The official who supervises the salesmen in the field may be a "foreman" of salesmen, whose prime or sole function is that of overseeing a limited group of salesmen, or a district manager, who may have other responsibilities in addition to that of the sales force operating in his district. Supervisory officials of the first type represent a clear-cut application of the idea of foremanship, universally accepted in factory practice, to the management of the sales force in the field. While in practice it has been found advisable to give the appearance of greater dignity to the position of sales foreman, calling him district sales director, squad leader, district manager, or the like, there is no uniformity in designation nor is there uniformity of duties. The use of sales foremen is justified only if it increases profits through increased sales or lower costs of selling. The use of sales foremen is ordinarily expected to increase sales for several reasons—first, because of the improved supervision furnished, there is greater probability that duties of salesmen will be performed more satisfactorily and that waste and other expenses will be lessened. Secondly, the work of the sales foreman should bring about better selection and better training of salesmen; as a consequence, salesmen who perform more satisfactory service and are better paid. The consequence is likely to be also a smaller turnover in sales force. Thirdly, sales foremen in large organizations provide a means of obtaining the much-needed contact between headquarters and field force, a contact which on the one hand enables the ideas and wishes of headquarters to be transmitted into the field more effectively, and on the other hand provides for the collection of information concerning conditions in the field and opinions which are of the utmost importance to the correct planning and direction of sales operations by the headquarters staff. Furthermore, the position of sales foreman offers an opportunity for the promotion of salesmen to a subordinate executive position, therefore, an opportunity for determining the qualifications of the salesman for executive work with less risk than if promotion has to be made directly to more important positions.

The introduction of sales foremanship, either through the appointment of

field supervisors, or managers of sales offices, may not give the expected results. The foreman chosen may be incompetent. Not infrequently, when such foremen are chosen from the ranks of the salesmen, they are incompetent or unfitted for the position because they have few qualities of leadership although they may have outstanding selling ability. The foreman may not be able to convince the men under him that he can be of assistance. It is conceivable also that expected increases in sales may not be realized, because under previously existing conditions the salesmen were working under such pressure and under such direction from the home office that little change could be effected even by competent foremanship. In the last place, the increases in sales may not be realized for a considerable period of time both because the sales foreman, if promoted from the ranks, must be trained to his new position and because he is apt to encounter the opposition of salesmen not so promoted. Many salesmen, who have been accustomed to going without such supervision, resent the implication that they need it. However, if the sales foreman is able to show results, perhaps to bring about more satisfactory incomes for salesmen, such difficulties will be only temporary.

The functions of sales foremen include, first of all, education of field forces. The sales foreman is expected to work with the salesmen over whom he has supervision, to assist them in improving their salesmanship, to demonstrate how to sell particular classes of products, to assist them to become acquainted with the new products which are put out by the manufacturer, to help the salesmen to know thoroughly and to appreciate policies and methods of the sales organization of which they are a part. As a part of the control and supervision duties of a foreman, the stimulation of salesmen both by continuous educational work and by personal assistance to each man in overcoming special difficulties is necessary to prevent salesmen from only half-heartedly exerting themselves or from falling into ruts. Not infrequently the sales foreman will be expected to make up for the shortcomings of salesmen. He may be expected to open new accounts or to take special pains to see that salesmen do not neglect this phase of the work as they are prone to do. He may undertake to facilitate adjustments with customers which it would not be wise to allow salesmen themselves to make. The elimination of the delay and red tape necessary to effect such adjustments through the home office may be productive of much good-will. In general, the function of the sales foreman is, therefore, to assist the salesmen in producing greater sales and in laying the foundation of good-will for future business. In his relations to the home office the foreman is also held to be more responsible for reports and information than is the individual salesman.

II. Sales Branches

The conclusion that a sales force needs field supervision does not lead immediately to the conclusion that branches must be established. It is true that the general justification for the establishment of branches is that the size of the organization is so great and the area covered by sales operations is so extensive that decentralization is necessary both for the supervision of salesmen and for the performance of other functions which may not be satisfactorily performed from the home office. However, not infrequently a firm may adopt a distribution policy which will greatly increase the size of the sales

force necessary to perform the marketing functions which it has assumed. The manufacturer of a certain type of grocery products may choose to sell through manufacturers' agents, and all the selling operations may be performed by one of the members of the firm. Another manufacturer of the same product might choose to sell through retailers, and to provide an organization for making shipments promptly, calling upon thousands of retailers if he wished to cover the United States. Even though a concern does not adopt the policy of selling directly to retailers, it may attempt to provide more aggressive selling and overcome the indifference of retailers and jobbers by providing special types of missionary salesmen who call upon the retailers in the interests of the manufacturer, though distribution is continued through the jobber. The adoption of this policy increases, of course, in a very important measure the need for field supervision and field organization; but whether the manufacturer wishes to eliminate one or more classes of middlemen or not, the common desire in the development of a branch organization is to secure more aggressive selling or to bring distributors into line. As an instance of the latter, a prominent manufacturer of widely advertised builders hardware, upon whom pressure was being exerted by wholesalers to secure private brand goods, established a complete system of branches for the purpose of selling directly to hardware retailers. Wholesalers protested but after a time gave up their demand for private brands; whereupon the manufacturer disbanded his branch organization. In so far as the branch undertakes to supplant one or more classes of distributors, there is the advantage of securing more outlets and getting into closer contact with buyers. By controlling his outlets the producer may secure full and undivided attention for his product. The closer control of sales and the absolute control of the branch organization enable the manufacturer to assure himself of full cooperation in all sales promotional activities. The desired cooperation in advertising campaigns and in the utilization of dealer helps cannot usually be secured from jobbers, who as a matter of policy cannot properly devote a disproportionate amount of time to any one product or to any limited line. Even more important is the fact that elimination of one or more distributive steps between the manufacturer and the consumer increases by so much the possibility of contact with the consumer and provides closer contact with buyers and a direct means of establishing and maintaining their good-will. However, the branch organization will usually encounter opposition where a definite attempt is made to supplant one or more of the additional types of distributors. The jobber or dealer feels that his position is threatened and that the manufacturer is usurping his functions, perhaps preparing the way to his elimination from the field of distribution. Various measures have been adopted to meet this opposition. It is generally known by the trade that the wholesale branches of one manufacturer of valves and pipe fittings are treated no differently than independent wholesalers; thus in competition with the manufacturer's branches, the independent firms are placed at no disadvantage. A large shoe manufacturer purchased several wholesale shoe firms in cities where he desired to establish wholesale branches. The opposition of middlemen must be taken into account by the executive, both in determining his policy with reference to the estab-

lishment of branches and in determining the policies which shall govern branches after their establishment.

The establishment of the branch may be justified from the viewpoint of the executive when the requirements of the customers in a territory clearly demand more prompt or more economical delivery than can be afforded by shipment from the plant. The rendition of such delivery service calls, first of all, for warehousing and shipping facilities at other localities than at the manufacturing plant, but such warehousing and shipping branches, if under the direction and control of the concern, become very convenient points at which the functions of supervision of the sales force may be performed. The maintenance of stocks at other points than at the central warehouse and the maintenance of a system of branches which carry stock are not infrequently favored by the manufacturer, because thereby he can be assured that advertising, spread over a wide area, will not fail to bring results because of the absence or inadequacy of supply of the product. Even where wholesalers or retailers are used, the establishment of warehouses and sales branches at convenient strategic points may be necessary to satisfy the peculiar requirements of particular classes of distributors, whose buying habits may lead to their being frequently out of stock. There may also be an advantage in shipping to branch points in car-lots. Savings in freight costs may be effected thereby if the average buyer does not purchase in lots sufficient to take advantage of the most economical rates.

The establishment of the branch system may furthermore be justified when expert service is necessary for the installation, maintenance, or repair of a product. From the viewpoint of the sales department, such service may be necessary to keep the product sold, to keep it giving satisfactory service, so as to maintain or increase such goodwill as already exists. However, it should be clear that dealers who may be selling their product cannot or will not render such service in a satisfactory manner. Exclusive dealers handling particular lines of complex products, such as automobiles, may be expected to and frequently do render the service which is necessary; but when the dealer possesses no exclusive rights, and in many cases even though he does, he will not be willing to afford the time or energy to render the service needed unless he is paid very liberally for it.

However important these considerations may appear to the executive, the benefits of branch organization cannot be secured except at the cost of assuming financial obligations, risks, and expenses which may absorb not only the profits of the branch organization but also, on occasion, much more. The provision of increased capital and the assumption of additional expense are bound up with the extension of branch organization, unless by means of a graded scale of commission payments to the various members of the field sales force the burden of maintaining field offices, equipment, and personnel is shifted. Capital requirements may be increased because buildings and equipment must often be furnished for field organization. Working capital requirements are increased by the amounts required to carry inventories at branches or at other points for delivery to buyers. A dozen stocks of merchandise maintained at various branches for the purpose of affording prompt delivery of all the items in a line will tie up much more capital than a single stock required for the transaction of a volume of business

equal to that of all the branches. Both by maintenance of stocks and the extension of credit, the length of time which must elapse between the completion of the process of manufacture and the receipt of cash for goods sold is increased. The extension of credit to buyers by the branch wherever branches supplant distributors, increases greatly the amount of capital required to conduct the business and involves added risk of loss. The difficulty of extending credit to retailers has deterred more manufacturers from direct sale to retailers than any other difficulty. In the third place, the amount of working capital required is augmented by the increased expense account which must be assumed—rent, salaries, wages, and drawing accounts—and increased administrative expense. Because the salesmen of a manufacturing concern will usually carry a single and limited line as compared to the salesmen of the wholesaler, salesforce expense in manufacturers' branch organizations is usually heavier than in wholesale enterprises.

Even more important than the financial burdens and risks assumed in the development of a system of branches are the difficulties of management. There is the difficulty of securing capable branch personnel. In most concerns the type of branch manager who is most successful is the type of man who would be successful if in business for himself. The training of branch personnel presents many problems.

More difficult than the ascertainment of the factors involved in the adoption of a branch policy is the quantitative measurement of those factors so as to determine whether the branch system as a whole, or whether individual branches will be directly or indirectly profitable undertakings. Whether the sales volume will be increased or maintained is a question whose answer many executives seek to find in the examination of past sales. By some, large sales are regarded as favorable to the establishment of a branch whether to supplement or to supplant present distributors. By others, relatively large sales in a territory are taken to indicate a satisfactory condition of affairs leading to the conclusion that the branch is not needed, at least for the purposes of aggressive selling. The two viewpoints are not antagonistic, if we understand that sales are to be considered as large or small in their relationship to individual territories. Thus, a small absolute volume of sales in a poor territory might indicate a much more satisfactory condition to the sales executive than a larger volume in a much richer territory. Conservatism is needed in analyzing the possibilities of a territory if branches are contemplated.

Once it has been decided to establish branches, the considerations influencing the number and location are less conflicting than those affecting location and size of sales headquarters. It is clear that the number of branches to be established should be no greater than is absolutely necessary for the accomplishments of the defensible purposes of branch organization. Neither should branches ordinarily be established until there is ground for belief that within a reasonably short period they will prove sources of profit rather than of deficits. However, in some cases the maintenance of unprofitable branches may be justified on the ground that they increase the prestige of the concern more than in proportion to the losses incurred. In other cases the influence of competition is such that the company dares not find itself without strong representation in particular markets, even though that representation is not directly profitable.

A THEORY OF INDUSTRIAL CONDUCT AND LEADERSHIP

By WHITING WILLIAMS

AS an executive of a steel company, I commonly heard the shortcomings of the industrial worker explained by reference to the "economic man," that hypothetical person to whom nothing is supposed to appeal "unless it's in his pay envelope." When later I worked and lived among the laborers of both America and Europe, it was an immense surprise to find my companions using exactly this same "pay-envelope theory" to explain the shortcomings of their employers!

Manifestly, something must be wrong with any explanation of human behavior which, while so universally accepted as a motive for others, is with equal universality refused for one's self. A very considerable part of the bitterness of the so-called Labor and Capital dispute undoubtedly follows from the effort on the part of each group to make this theory account for the shortcomings of the other. For, unfortunately, the failure of the theory to explain any particular field of experience in connection with a group of persons results in the abandonment, not of the theory, but of all belief in the group's innate humanness and susceptibility to any fair or logical appeal. The trouble is, of course, that the capitalist or the manager, as well as the worker, tends to check up his people by his theory, instead of checking up his theory by his people.

Fortunately, the present time sees a heightened interest in the search for a new hypothesis which shall find in our common nature as humans some common factor to explain the bristling points of our differences in the industrial or other fields, and at the same time furnish, in the shape of some equally fundamental human resemblance or unity, a means of their overcoming.

Thus, the philosophers have recently been discussing the so-called "instinct theory." According to this, in the words of Carleton H. Parker, everyone of us is "born into this world accompanied by a rich psychical disposition which furnishes him ready-made all his motives of conduct, economic or wasteful, moral or depraved. . . . He can show a demand for nothing that is not prompted by this galaxy of instincts." "Take away these instinctive dispositions with their powerful impulses," according to Professor William McDougall, of Harvard, "and the human organization would become incapable of activity of any kind—like a wonderful clockwork whose mainspring had been removed."

Admittedly, we shall never get away from the reach of such inborn tendencies as are thought of in connection with hunger, sex, fear, anger, etc., implanted as they are so deep within our physiological equipment, and functioning so largely for the purpose of our physiological preservation. Admittedly, too, these ancient reaction-tendencies have their more modern and social masks by which they aim to exert their force upon us in the more complex relationships of to-day. But more and more we are

finding that these instincts present to us not so much an explanation as a mere catalogue of certain well-worn channels of our response to a long-established environment. Their very number and diversity, indeed, call for some common denominator by which they may be coördinated so that the disturbing force of, say, "revolt at confinement" can be compared with the stabilizing influence of, for instance, "love of home." Without such a common element, surely, such a list of behavior channels gives little or no assistance to the modern business executive, charged as he is with the responsibility of exercising his influence and his leadership upon the daily doings of the members of his organization.

In line with recent thinking, such a unifying factor is likely to be more complex than could have been imagined before we came to realize how great a part in the direction of our lives is played by the forces which lie deep in the obscurities of our subconscious thought and feeling. It is conceivable, therefore, that there can be no concise statement which can be made universal and all-inclusive. That should not deter us, however, from attempting some simple definition of our human mainsprings if that definition can be found to serve a useful function in simplifying the modern executive's responsibility for securing and directing the energies of his co-workers.

As tending to embody the desired common factor in a list of instincts, and as a substitute for the pay-envelope theory, I submit for the consideration of anyone charged with the duty of human influence the following:

In organized society to-day the "wheels" of each of us are turned by the mainspring of our desire to enjoy the feeling of our worth as a person among other persons, that individual feeling requiring always for its fullest satisfaction the utmost possible substantiation at the hands of some particular group whose approval happens, at the moment, to appear especially desirable and pertinent.

The material nature which abhors a vacuum—whether it be ethereal space or empty stomach—is to-day less troublesome in its requirements than is the "human nature" of our organized society by virtue of which we abhor the spiritual cipher—the one who in reality does not *count* one. To each of us to-day, the most important thing in all the living of our lives is the message of the meter which registers the distance we have achieved away from the hateful zero of insignificance among our fellows. If that were all, then selfishness might have its way. But just because this distance is so vital to our happiness, we dare not trust the reading of the dial to our own eyes: somehow, somewhere, in the eyes of the few or the many, our findings must secure the backing of a body of less prejudiced witnesses.

I

The moment we come to prefer the substantiation of one kind or group of witnesses to another, that moment we start towards establishing the precise direction and orbit of our planetary career in the social universe about us.

To understand the doings or misdoings of our fellows—or to exert any leadership upon them—is, therefore, to see in them merely the resultants of the interplay of these two forces—first, the thrust of this master wish for individual worth working its way out through the spaces of our present-day social firmament according to the restrictive pushes or the compelling pulls of the second force—the approvals and disapprovals

of the chosen "set" and of the multitude of the other less closely related sets around us.

To-day the majority of us find ourselves in such contact with the general public that we are likely to accept as final for us the measurement of the particular tape-line which that public, rather than any smaller and probably more discerning group, currently employs. Here in the United States that is apt to mean the pursuit of one thing —wealth. For, at the present time at least, the dollar furnishes the yardstick by which the great body of our fellow-citizens habitually endeavors to determine the exact degree of any one member's accomplishment. What is to be noted is that the social value thus given to money is due to its ability to purchase not goods but esteem—to its high sanction as a well-adapted measure of personal and social achievement. That this sanction-value is not necessarily permanent was demonstrated in the summer of 1917, when the dollar measure suddenly gave way to the chevrons, bars, and eagles because of their ability to demonstrate the distance traveled by their wearer from the comparative insignificance of the "rookie."

Besides being far from permanent, this sanction-value of money is also far from being universal in its application. To-day in South America, the civilized majority uses the money measure with what strikes us as extreme carelessness. The business man there takes days of leisurely lunching and dining with the aggressive young salesman from North America, not because time or money is of no value, but in order to make sure that the final business dealing will be between gentlemen. Pecuniary profit, that is, counts less in the reading of the South American gentleman's public honor-rating than does the maintenance of his inherited social preëminence as a person of outstanding birth and established culture. The visiting salesman's problem is, therefore, merely to make it evident that under his guidance there need be no conflict between the two.

The heads of certain New York bond-houses report that exactly the same is true in the case of many possessors of inherited wealth and culture in Boston, Philadelphia, and others of our older cities. Similarly, anyone connected with the maintenance of philanthropic or social work is sure to make this surprising discovery: that the philanthropic spirit has less to do with finance than with feeling—that a man is as rich, and so as generous, as he happens to feel. And how he feels depends mainly upon the same factor that influences the South American merchant; namely, his standing with those who move in his own particular set and circle.

The incessant urge of this desire for the satisfaction among our fellows, not so much of preëminence as of equality—of the avoidance of net inferiority—accounts not only for many of our doings but even more especially for what are termed our misdoings. If the indispensable substantiation of our own individual sense of satisfaction cannot be found in virtuous and decent actuality, then it is fairly sure to be sought in crime, indecency, or illusion.

To be a person—whether rich or poor, sane or insane, sober or intoxicated, virtuous or vicious—is to wish to feel one's self a full-functioning person among other persons. This, I submit, is more nearly than any other the master-motive of each of us to-day, and any understanding and any wise direction of modern human action must, to be effective, proceed from a knowledge of it. Such a motive is something more

inclusive than what is ordinarily connoted by "self-respect," because for one thing it is quite as dependent upon the opinion of others as of one's self.

II

In determining the results of action founded upon this underlying motive, it is of the utmost importance to note that this measuring of our worth in comparison with others is accomplished by, not our thinking, but our *feeling*—and that this feeling follows from the ceaseless compounding of current sensation and sentiment as well as sense. Through the door of our feelings, thus, the whole of our physical as well as our mental and spiritual environment walks in upon us for determining all those attitudes which in turn determine our actions. The very continuance of life itself—the avoidance of the suicide's grave—indicates our belief that somewhere or somehow we are managing to save ourselves from having to admit our net inferiority in comparison with those about us. Not one of us but knows in the secret places of his heart that, in this sector and that of the Western Front of his contacts with others, the line has been pierced. That only makes all the greater the necessity, the uttermost necessity, of finding some other sector for staging a break-through—a soul-saving, because a soul-justifying, break-through.

I submit that nothing is more filled with meaning for the modern leader, whether in industry or elsewhere, than this: Under normal conditions, practically all of us in America, from top to bottom, from rich to poor, endeavor first of all to direct all the energies of our souls toward locating this indispensable "break-through" on the sector of our work—our job. It is impossible to explain this by reference merely to the dollar and its measurements. Those endless hours of the worker's talk about self-importances through work — importances which finally end in giving this job a higher place than that in the hierarchy of labor—keep dollars and cents in mind, to be sure. But besides the differences of pennies per hour, there are endless others which follow from the work's comparative demands or opportunities for skill, care, courage, muscle, manliness, and general worth. Trouble comes only when, for one reason or another, the penny differences and the prestige differences get too far out of line with each other.

It is completely impossible to get close to the heart of the labor problem, until we understand that truth which every worker not only knows but lives by: namely, that in the working world every man earns his right to think well of himself as a person among other persons, and establishes his own and his family's standing and social rating in his community, less by the earning power than by the nature and the importance of his job.

So the mill-wright gang in the steel-plant takes itself enormously more seriously than does the labor gang, even though the money difference is slight. So, too, in Wales, the wife of the head mechanic habitually called her husband, "The Boss." The reason, of course, was that the term served to designate not only her man's job but also her possession of the social leadership of the community which went with it. At the bottom of the Welsh mine-town's social structure stands the repairer, because his job is least important. Above him in the social, because in the industrial, scale comes the mechanic with his greater skill in establishing the proper level of the rails. Above him, in turn, though with practically no increase in

wage, comes the haulier, with his heavy responsibility for the lives of the score or two of expensive draught horses. Above him, in turn—and so above his wife and children—stands, with his family the real getter of coal "at the face" of the seam, the collier!

This is not strange. Few of us but realize that the tangible and more or less measurable accomplishments of our working day constitute an infinitely safer and more reliable platform for supporting our standing in the minds of both ourselves and our community than is afforded by either the sum of our possessions or the intensity of our ideas or ideals. But most of us fail to understand that every one of our fellow citizens is exactly like us in thus wishing to do his daily uttermost to justify his right not so much to three meals a day as to his belief in his worth as a man among men, by the inescapable demonstration of his worth as a workman among workmen!

This vital connection between job status and social status means, of course, that the problem of effective relations with the worker inside the factory cannot be successfully separated from the whole problem of general social relations outside. So the foreman is only the first of that long line of managers, stockholders, consumers and citizens who finally determine the social as well as the industrial usefulness and value of the work and therefore the social as well as the industrial value of the worker. But how far the factory boss or gang leader and his particular measurements are likely to figure in the worker's whole thought about himself is indicated, partly at least, by mere arithmetic. Since his working hours constitute the larger proportion of his waking hours, it is in those hours that he has the greatest opportunity to win the recognition of his fellows.

Arithmetic is not all. Another reason the job serves so well as the marker of our progress is that it indicates a measurement of our capacities and abilities at the hands not of ourselves but of others—and others who are presumably not prejudiced. So it is not mere chance that work comes thus to offer a definite pledge of social as well as economic satisfactions in return for the energies of mind or body. Just as in France or the old Germany a distinguished citizen is seldom mentioned without his full title as a government functionary, so with us here the business man or the worker is referred to with the title of his job as vice-president of the Standard Manufacturing Company, the head of the shipping room at the cannery, or the blacksmith at the K. & O. shops. Not one of us but knows that no success in any other line can quite offset the evil—the social catastrophe—of failure in the accepted task. If necessary, all the resources of our entire front must be sacrificed in the effort to make an imposing stand there in the vital sector of the job. It is only one of the prices we pay for the liberties as well as the limitations of living in a land where the question, "Who is he?" is known to mean, "What does he do? What is his job?"

But if we have done so much thus both outside and inside the shop to organize our approvals on behalf of the doer of work, why is it that such huge bodies of men at all stages in industry join in that advice which is so generally heard within the working world: that the worker should use only the minimum of energy and effort at his job? Again the answer is to be found by reference to the effect of feelings of workmen upon their attitude and actions.

Large groups of men to-day join in deciding upon their present or their future doings, not upon the facts as these exist in statistical tables or as they are stated by the management, but upon the facts of their own experience—facts as they have been lived and felt. Thus, over-long hours, undue heat or cold, needless danger of accident or poison, and many other similar conditions of work, tend toward costly loafing because they whisper to the worker's feelings that his physical as well as his social self-preservation requires holding onto every mite of energy not forced from him. If, off the job also, the conditions of living counsel the same saving of physical effort, all the appeal and the approval of the foreman and of the whole community behind him begin to encounter all the hardened crust of indifference built up by those automatic efforts at self-protection—and so to go by the board. In more than a few mining towns of both America and France all the social as well as the industrial relationships and appeals appeared rendered largely fruitless simply for the lack of some miles of water pipe!

What is less generally manifest but equally significant is this: that within the shop, poor tools by failing to help to the hoped-for achievement of results, constitute a tremendous barrier to that exchange of physical or mental energy for proportionate social respect and standing which is ordinarily called work. Poor tools also lead definitely to all those distorted attitudes and all those automatic "protective colorations" which follow upon the heels of fatigue. It is hardly proper to say that weariness is the result of a certain amount of effort; for all practical purposes it is the result of a disproportion —a disappointing disproportion—between giving and getting, between effort and result. I know that many careless workers mistreat good tools because they do not realize—often because no one has told them—how much money they have cost. But I also know that literally tens of thousands of good workers get their first shock of distrust for their employer's announced ideals of production and efficiency by observing his amazing failure to appreciate tools and their value to the worker's spirit as well as to his physical condition and output.

III

But the chief obstacles to the satisfactions of diligence come not so much from the physical as from the spiritual part of the environment—though our feelings make it all but impossible to distinguish between the two. It has to be confessed that we have not yet been able to stage anything like the proper setting for the hoped-for break-through in these persons who compose that first line of the industrial defense—I mean the foreman, the plant policeman, and the paymaster. For entirely too many workers, actual experience with these serves only to demonstrate that there is only one way in which to save their "face": namely, to harden their sensibilities to the uttermost.

But rough handling is only part of many foremen's larger failure to give the worker a greater share of the satisfaction of doing his own job under his own steam. One reason why there are 150,000 more miners in our coal towns that can be fully occupied is that the miner's work can, in the nature of things, be given only a minimum of supervision, and so permits a maximum satisfaction because of a maximum of personal responsibility and freedom.

To correct this evil of "hogging" the job and its spiritual rewards it is neces-

sary to do much more than merely to put the foreman into a class on the technique of handling men. Generally the management will do better to inquire into the conditions which are likely to cause this hurtful practice. All too often, the reason is that the foreman has to steal these satisfactions from his workers simply because somebody above him is stealing them away from him. According to our theory, a man will either throw up his work and seek elsewhere, or he will do his uttermost to get enough of the means towards the sense of his worth as to "make it a job." Often enough, in turn, the man above the various foremen is stealing away their satisfactions simply because the superintendent is stealing them from him—and so on up the line.

But it is not strange if management from top to bottom finds it difficult continuously to give that measure of satisfaction in terms of self-worth, which, according to our thesis, is required in order to secure the maximum of work. As long as it is our feelings that compute our status and position from moment to moment, the problem will remain sufficiently complex, for in our ceaseless reckoning of our spiritual and social latitude and longitude, these feelings have no choice but to accept the testimony of muscle as well as mind, of sinew as well as spirit. But besides all the intricate and unstable delicacy and sensitiveness which this implies, the reckoning must everlastingly accept the complications of relativity! In order to measure our distance and direction across the line of mediocrity, we have to compare ourselves with something or somebody—with some "system of coordinates," as Einstein would put it. First, we are in the habit of measuring our own present alongside of our past. In addition, we are sure to measure our general movement and position alongside that of the particular group we have chosen as our own. That group itself is, of course, moving. It is moving, furthermore, in an orbit rendered difficult of charting because it is itself determining its position in comparison with still other groups, every one of which is itself in motion!

No wonder that superintendents and managers of every description have virtually thrown up their hands in dismay in these recent days! From the commencement of the Great War the movement of groups in strange directions has been too rapid to permit satisfactory correlation without immense social commotion. In thousands of towns, for instance, the urgent demand for munitions permitted unskilled laborers suddenly to obtain huge earnings from fool-proof machines and so to provide their families with luxuries to the chagrin of the machinists, the hitherto acknowledged social leaders by virtue of their years of training in skill and responsibility.

The Industrial Workers of the World believe that all these job distinctions are undemocratic and wrong. For the rest of us these represent our efforts to provide the motive power of progress by building up for the doer of useful work a proportionate amount of satisfaction and recognition. We must think seriously before our failure rightly and justly to use it persuades us to abandon it.

IV

But all these failures and obstacles in the shape of the job's physical and spiritual conditions have slight effect upon the worker's attitude towards society's promises in comparison with one thing —the absence of the job itself. The irregularity of the opportunity to work

—this is the great barrier of our modern times to the worker's "turning himself loose" in his effort at the maximum rewards of diligence.

It may be asked why this experience of joblessness is taken so much to heart, since most workers probably possess the opportunity for remunerative work most of the time. The huge importance of the *intensity* rather than the time-duration of our emotions and, so, of our experience—does not this supply the answer? A few days of the lowered eyes and sunken chest that go with the poverty-stricken search for work are enough to furnish a fervency of misery that will outlast years of comparative prosperity. To imagine that this misery can be driven away by the ministrations of the bread-line and the soup-kitchen is to forget completely the effectiveness of all those personal and social satisfactions and rewards which have been promised the useful doer. In the nature of the case, the withdrawal of these in the days of joblessness is bound to produce a condition nothing short of tragedy—tragedy that does not fail to give to all the thought of future years a permanently gray and ragged edge of fear.

It is such obstacles as these that convince huge groups of workers, with the extraordinary conviction of highly emotional and therefore supremely powerful experience, that the modern industrial sector is too difficult—that the promises of social and spiritual recognition in proportion to work done are unreliable. Whether genuinely justified or not, the conviction produces the same strategy as when Generalissimo Foch became persuaded that this sector or that successfully resisted his efforts. Leaving behind him just enough of his interest and attention to hold the line —to keep from being "fired"—the worker takes the reserves of his energy and aspiration and seeks at some other point to secure the desired maximum satisfaction for maximum effort.

With the help of a strong constitution and a sense of humor, some workers can apply at the sector of their civic relationships an energy of body and brain sufficient to make them leaders—probably radical leaders, if these talents have failed to bring them due responsibility or standing where they want it most—on the job. Tens of thousands of workers, of the holders of the poorer jobs, it must be admitted sadly, enter the final sector of their personal and miscellaneous off-the-job relationships with a sense of defeat—exhausted physically, perhaps, but ready to devote the full thrust of their unsatisfied spiritual hunger for recognition to a last, desperate effort, in the realm of their personal relations—with the help of profanity, alcohol, or vice. Too long the philosophers have overlooked the effects of the back-fire from men's work upon men's lives.

Neither in work nor elsewhere do men desire to follow the line of least resistance: rather do they wish to pursue the line which is found unfailingly to furnish the maximum satisfaction of their wish for worth per unit of effort expended. Too long we have thought of work as a curse. The truth is that everyone of us plays a part in making it whatever it is; it becomes a curse only when we withhold from the performer of any useful service our proportionate economic and social recognition. Because we have so long failed to see men's wish for worth through work, we have failed too often to keep our promises of reward. Indeed, we have too generally based our whole program of the management of our industrial personnel less upon the hope of re-

ward than upon the fear of punishment. That fear is the fear of discharge—the fear of joblessness and all of those attendant stigmas and miseries which not management but society has erected.

In education, religion, and salesmanship we have learned to dispense with fear as a motive. We have found by experience that the certainty of reward, recognition, and satisfaction—the demonstrated certainty—gets better results than the possibility of punishment in this world or the next. Industry must learn the same, if it is ever to retrieve for itself and society that huge per cent of man's potential energies which now goes unapplied or, worse, misapplied.

Change from a punishment economy to a reward economy will not require, I believe, any radical change of our economic system. But it will require an enormously more efficient industrial administration than now generally exists. Such management must think of its problem as a problem not of control but of leadership.

What that involves there is no space here to suggest. But for one thing it is, perhaps, not too much to say that the new schools of business administration can well be of strategic assistance to the life as well as to the work of the nation, because of their opportunity to stress this phase of the responsibility of the modern executive. As a primary determiner of work and work conditions, he can hardly be reminded too often of his inescapable possibilities—for evil or for good. Upon him rests the responsibility also for the social and the spiritual structure which men everywhere yearn to rear upon the foundations of their jobs.

MEASURING THE PERFORMANCE OF THE PRODUCTION DEPARTMENT

By HENRY H. FARQUHAR

THERE are three "yardsticks" for which a need is constantly felt in industry. These are:

1. For measuring the work of an individual.

2. For measuring the work of a department.

3. For measuring the work of the establishment as a whole.

Progress implies measurement and comparison, and these necessitate some sort of standard by which relative efficiencies may be determined from time to time. Most of the gauges by which the manager seeks to determine the effectiveness of performance not only fail to give him what he believes he is getting, but are actually misleading and oftentimes unjust. One had much better place reliance on mature judgment in such matters than lean on a measure which is deceptive. The methods most frequently used all have one fault in common: the fact that the very basis of the yardstick itself is composed of elements which are not invariable but which constantly change with changing business conditions.[1]

Since efficiency itself is entirely a relative matter, however, it is not surprising that even with the constant effort to better manufacturing methods there should be little agreement as to the best basis for constructing a yardstick for any one of these three purposes.[2] It is the purpose of this study to show why

[1] One case in point may be mentioned. The manager of this plant had been accustomed, in accordance with a system installed by a cost accountant, to measure the ability of one of his production superintendents by the amount which actual total cost varied above or below a predetermined "standard" cost. The standard was composed of a standard or uniform price of materials, of the going rate of wages times the length of time necessary for processing operations, and of the amount of "burden" (fixed charges, supervision, repairs, supplies, etc.) which was normally considered sufficient for operation under the particular conditions at the time. Against these standards were put the actual costs incurred for these purposes. Within one week the following took place: A new superintendent was hired at a beginning wage less than his predecessor's; two new machines requiring considerable additional power were put into use which eliminated several previous operations; five expert machinists left and were replaced at lower wages by men less expert, and several men had to be sent home Friday afternoon, with pay for time lost, because no work was available for them due to the delivery of materials not up to specifications and unfit for processing. The previous "Standards" for supervision, machine and hand operations and rates, direct labor costs, and material costs were thereby thrown out of joint and made useless as a basis of comparison with actual costs. Similar instances might be mentioned for most of the other bases which are commented upon in the next few topics.

[2] Benedict, H. G., *Performance Ratings for Salaried Executives.* Bulletin of Taylor Society, August, 1922.

Cooke, M. L., *Industrial Management,* January, 1919, and Farnham, D. T., *Ibid.,* March, 1919.

Dunn, W. E., "Measuring Executive Ability," *Industrial Management,* May, 1922.

Gantt, H. L., *Measuring Efficiency,* American Society Mechanical Engineers, Paper No. 1444.

Gantt, H. L., *Productive Capacity as a Measure of Value of an Industrial Property,* Transactions of the American Society of Mechanical Engineers, 1916.

Harrison, G. C., *Cost Accounting to Aid Production,* Engineering Magazine Company, New York City, 1921.

Shelton, H. W., "Mutual Rating," *Bulletin of Taylor Society,* Vol. V, No. 2, April, 1920.

some of these current bases are unsatisfactory, and to indicate the fundamental necessity of *standard times* based upon standardized working conditions as a basis of production measurement.

This problem of measurement is somewhat more complex than might appear on the surface. Although perfection in the work of the individual makes for perfection in the department and the resultant efficiency of the departments constitutes the efficiency of the whole plant, yet the elements entering into the determination of the efficiency in each of these cases vary so widely, and are so interdependent, that it is necessary to consider each on its own basis.[3] No general formula for measuring performance can be applicable alike to the individual, to the departments, and to the plant as a whole. When we attempt to measure any one of these we immediately encounter variables not wholly under its control. Since efficiency must always be expressed in relative terms, however, some standard in each case may usually be determined which serves as a basis for measuring performance. The problem is to get a measure which embodies all of these variables in the simplest yet most accurate fashion possible.

The measurement of plant performance will be only incidentally considered in so far as the discussion of production department measurement may throw light on this problem; neither is consideration given the far more difficult question of comparing the relative effectiveness of different shops or plants. It is the intention in the present discussion to deal primarily with the measurement of the direct production departments of the typical manufacturing plant operating under given conditions with given methods, and to consider in this connection first the measurement of the individual and then the bearing this may have on the measurement of the manufacturing department as a whole. The degree of efficiency which might be attained under different conditions with other implements and methods is obviously within the realm of speculation as to the future

[3] Thus, an individual may be wholly useful though he give his entire time to the spending of money, and cannot therefore show a profit; or he may be wholly useful even though his contribution consist solely in his presence at a particular point at a particular time. On the contrary, an individual may be consistently *busy* at necessary work, yet very inefficiently producing. A department, correspondingly, may be useful or even necessary, and may operate efficiently, even though individually it be conducted at a financial loss. The interrelation of departments is an important factor in determining the efficiency of any one department. For example, the Power Department in a certain plant may be working at 100 per cent efficiency so far as it is concerned, yet if the Purchasing Department were to furnish it with a better grade of coal, the Power Department would (still at 100 per cent efficiency of internal operation) produce cheaper power. The plant as a whole, to be considered efficient, must ordinarily produce a profit, and yet this profit (even a large one) may be produced in spite of inefficiency on the part of any one or more individuals or departments. Conversely, the business as a whole may lose money through the inefficiency of one individual, even though every one of his fellows be competent. As regards both total efficiency of any one plant, and relative efficiencies of different plants, we must usually get back as a final measure to the balance sheet and profit and loss statement, though these by themselves are unsafe guides to follow because of their generality and historical nature. In passing, however, the obvious facts should be pointed out that a monopoly, no matter how lax or costly its methods, may pay big dividends; that an exceptionally capable sales force may produce a profit in spite of lax purchasing or costly production; and lastly that location, the control of patents, financial policy, the market, and a host of similar factors affect the frequency and amount of dividends. It is indeed still true that "There is no apparent relation in many, if not most cases, between good shop management and the success or failure of the company, many unsuccessful companies having good shop management while the reverse is true of many which pay large dividends." Taylor, *Shop Management*. Par. 7.

rather than that of measurement of the present. What we need most of all and immediately is to be able to judge accurately how such standards as may exist at a particular time are being lived up to. Granted that we develop a proper yardstick for this purpose, the same measure should serve equally well upon the development of more severe standards of performance.

It is, of course, necessary to revise standards with changing conditions; the *basis* of the standard, however, should be a permanent one and not subject to the constant upsets which most of the following methods in current use necessitate.

Criticism of Current Methods of Measurement

Total Volume of Output—A little thought will show that this basis, not infrequently used, is the resultant not only of a fluctuating working force, but also of the activities of sales, of purchasing, and of other departments. The statement that output has increased, to be significant, must be supported by statistics showing number of operatives on the payroll, number of hours worked, whether there was plenty of work to be done, whether materials were supplied as needed, whether there were power troubles, and many other kinds of explanations. Total volume is an over-all figure at best, open to misinterpretation.

Output per Man per Day—The customary measurements of output per man or per machine per unit of time are open to similar objections. A man may first produce seven pieces per hour at only 80 per cent efficiency from the production standpoint alone; he may later produce only five identical pieces per hour but at 100 per cent personal efficiency; because in the latter case he had to overcome unfavorable conditions caused by departments outside of production—such as purchasing, power, and so on. Unless such records are coupled with and measured by an easily adjusted standard performance under standard conditions, which they seldom are, they prove to be but a flexible and unsatisfactory yardstick.

Ratio of Overhead to Total Cost—Ridiculous as it may seem, variation in overhead rate above or below a predetermined percentage of cost is sometimes used to determine even profits. Thus, the "standard" may be fixed at 20 per cent; that is, the overhead is assumed to be 20 per cent of the total cost; if during the period this ratio is found to be 18 per cent, a 2 per cent profit is claimed; if it is 22 per cent, a 2 per cent loss is charged up. Cost accounting is happily progressing beyond this stage. It is still distressingly common, however, to find executives who attach undue weight to this ratio in and for itself, forgetting that by an increase in overhead expense the total cost per unit (through added control thereby secured) may actually be reduced.

Thus, where labor, material, and overhead each forms one-third of the total expense, an increase of 3 per cent in one of these items (overhead, for control purposes), although it may look formidable in dollars and cents, increases the total expense but 1 per cent, which in the great majority of cases with any careful handling should be much more than offset by decreased overhead cost per unit due to the production of a greater volume over which that overhead is distributed, with even a strong probability of a decreased direct labor and material cost in addition. Even were this cost reduction not accomplished, however, there might be other advantages gained, such as improved quality or more rapid turnover.

The ratio of overhead to total cost may serve as a danger signal under uniform conditions of operation by disclosing possible increases in unit cost due to causes which must, however, be independently investigated in each case.

RATIO OF OVERHEAD TO DIRECT LABOR COST—The value of the ratio between overhead cost and direct labor cost as a measure of production may be judged by considering that simply by doubling the wages of all our direct ("productive") workers willy-nilly, the overhead ratio must at once drop to one-half its previous percentage. This percentage likewise may be and usually is affected by the degree of uniformity with which the line is drawn at various times between "direct" and "indirect" (overhead) expense. And finally, our overhead ratio must increase tremendously immediately if we run out of work (due to lack of sales) or run out of materials (due to failure of purchasing) no matter how efficiently we produce that which is actually asked of us. It will increase whenever a labor-saving machine or method is introduced or a foreman's salary raised; conversely it will decrease whenever additional operatives are added under the same supervision regardless of whether they are needed or not. However, reduction of the amount of direct labor through proper supervision would seem to be a step toward good management. If overhead ratio were significant as a measure, it might appear advisable to discharge all foremen and superintendents and let the shop run itself in order to keep the ratio down!

THE USE OF MACHINES AND MEN—Charts showing periods of individual machine and man work and idleness are undoubtedly admirable means by which to stimulate their more effective use, particularly when supplemented by an analysis of causes of idleness. Their extension in practice should be widely encouraged. The fact that a man works five hours per day, however, in itself means little. If that man has satisfactorily completed in five hours all the work laid out for him, he may have operated most satisfactorily from a processing standpoint; on the other hand, even though he had but this volume of work to do, if he took five hours when he should reasonably have taken but three and a-half hours, he has operated most unsatisfactorily. The same thing holds true in case we are dealing with machine activity instead of with that of men. In other words, such records are frequently misleading and inconclusive, and therefore unsafe; if based on proper standards, and if properly supplemented and properly interpreted, they may constitute, if not a measure, at least an indication of efficiency.[4]

COST PER UNIT OF OUTPUT OR PER PROCESS—It is not surprising that with the emphasis recently placed on cost systems the cost figure has come to be looked upon by many managers as the final authority in the measurement of industrial effectiveness. An analysis of the components of the cost figure may aid in an appraisal of its true value as an index to operating (production) efficiency.[5]

Of the three factors composing total cost—direct labor, direct material, and overhead—a combination of the first two, or *prime cost,* is perhaps most often used as a standard by which it is

[4] See Gantt, H. L., *Productive Capacity as a Measure of Value,* Transactions of American Society of Mechanical Engineers, 1916.

[5] As has been previously stated, efficiency cannot be claimed for the business as a whole unless the balance sheet shows a satisfactory condition.

assumed we stand or fall; *direct labor* cost is nearly as frequently used; *direct material* alone, of course, would be considered serviceable in only very exceptional circumstances which need not be discussed here; while the sum of all three elements, or *total cost,* is very frequently encountered. Total cost, of course, is valuable for the purpose of measuring production efficiency only in so far as its components are valuable. The proportion of total cost accounted for by overhead can have no more significance than the ratio of overhead already discussed.

In considering prime cost it will be recognized at once that one of the elements of which it is formed—material—is subject to fluctuations due to causes entirely unaffected by the degree of perfection in manufacturing management proper. A good bargain on the part of the purchasing agent may sooner or later reflect itself in lessened prime or total cost, while a costly purchase may have the reverse effect; both such possible effects, moreover, may be entirely neutralized and lost sight of through an increase or a decrease in the cost of either one of the other two factors—direct labor or overhead. It must be perfectly clear, therefore, that unless material be charged to cost at a predetermined uniform standard rate rather than at actual cost, any figure (prime or total cost) comprising this item must be discarded as a measure for the purpose we are seeking.

If materials be taken into cost at a standard figure, however, we obtain a prime cost index which will be serviceable only so far as the other factor—direct labor—to be discussed is in itself a trustworthy guide. Aside from this consideration and the difficulty of determining a prime cost standard, however, we have in such cases thrown upon us the considerable additional clerical labor and complication in our books due to the necessity of presenting this duplication of figures—standard and actual. In addition to this disadvantage, as contrasted with the use of a rigidly determined standard of time to be discussed, we have finally a measure not only of very much less immediate and practical utility, but also one which, as offsetting the increase in clerical force (overhead) necessary to its operation, can claim for and in itself alone little of a really constructive nature.

There remains to be discussed here only direct labor cost. Obviously, where this forms but a small percentage of total cost, it can have only limited significance as an index. Under this or the reverse condition, however, there are other considerations which may lead us to question its serviceability. Very frequently an exceptional worker remains for a time at a starting wage lower than his fellows who are producing less output; in any event, because of his high production, direct labor cost shows a decrease. The balance of the shop may meanwhile be producing no more efficiently than before he came. On the other hand, when an exceptional worker leaves, average direct labor cost must increase.

Consider another case. During the period in which our standard cost was determined, our material, say lumber, was of a comparatively uniform nature and easily worked. During the next two weeks we were forced to process more difficult material and our direct labor cost immediately increased. Under this condition the shop worked as efficiently as ever, even though it took longer to do the work. The increased cost was due to a condition not reflected in the cost itself, making it necessary to sup-

plement the cost statement by certain statistical information. Or, in the case above, the additional difficulty of working the material may be offset in the cost figure through less careful processing, resulting in a product not wholly up to standard.

Again, wages may rise or fall during any given cost period. Additional wage-rate statistics then become necessary. Power supply may vary—the cost figure must be supplemented by an attempt to weigh the effect of this variation; tools may be in improper condition—again statistics are called for. The sales department may fail to keep the shop supplied with work, or the purchasing department with materials—either fact reacts detrimentally on direct labor costs, and if this cost measure is to serve, it must be supplemented by involved statistics for each variable. And since this cost is simply the result of multiplying time by rate of wages, the question may well be raised as to whether for measurement purposes the use of time alone would not be more direct, tell a truer story as regards efficiency, and be much more serviceable generally. It would seem to be unwise to befog the issue by converting it into any other form whatever.[6]

In summary then, it may be said that any cost figure must be supported by several classes of statistics; those on wages and hours, those on materials, those on power, and so on—variables which ordinarily are not under the control of the foreman or production superintendent. Furthermore, where two or more of these factors at the same time bear on and modify the interpretation of costs, it is frequently impossible to determine the respective effects of each so as to obtain a net index of efficiency of production alone.

Even granted, however, that we have sufficiently complex production, cost, and statistical systems to differentiate these factors as well as idleness costs due strictly to production, the variations which are constantly taking place in these extraneous factors make extremely difficult and usually unsatisfactory the use of cost figures as our yardstick. Moreover, the usefulness of cost figures obtained through prevalent methods of cost keeping has largely disappeared[7] by the time such data become available. The simple recording of such costs, furthermore, does nothing to reduce them—we must still attack the problem at its source, which may or may not be, and usually is not except in a very general way, indicated by the cost data itself. And finally, lest too much weight be attached to the cost figure, it should be recalled that a decrease in any one of the elements of cost (labor, material, or overhead) may be secured at the price of an overbalancing increase elsewhere—particularly as between direct labor and overhead—a fact which would not be shown by the cost figure itself. Conversely, it must never be forgotten that "Management" should be synonymous with "Control," and if through certain necessary measures we have secured real control of our business, or have thereby turned out a more serviceable product, or have secured a quicker turnover even at higher cost and less profit per unit, we shall most assuredly not permit the cost department, offhand, to inform us that we are necessarily the losers because

[6] It is regrettable that this has not been clearly recognized by some managers who have been led into the unnecessary expense and complexity of converting a standard time into various round-about expressions.

[7] This statement does not apply, of course, when it is a case of choosing between various alternatives.

overhead of total cost has been increased. Total profits may also have been correspondingly increased.

OTHER METHODS—The rehearsal of different methods which one encounters in use might be greatly extended. These vary all the way from those which are so superficial as to be quite worthless, to those so complicated as to be quite unintelligible and inconclusive. An example of the former is illustrated when we are asked to judge the efficiency of labor supply by walking through the plant at various times and comparing the number of workers who are idle with the total number of workers present.[8] At the opposite extreme is another author who asks us to judge manufacturing efficiency by considering upwards of fifteen major factors (some with numerous subdivisions), nearly all of which are mutually dependent on some one or more of the others, leading to a "vicious circle" from which there is no escape except through inaccurate juggling.[9] Between these extremes fall numerous other methods, varying in detail if not in usefulness. A common numerator of several methods is the sales value of product produced, this being variously divided by the direct labor cost, by the sum of the total material maintenance and indirect labor cost, by the total production cost, by total number of employees, and probably by other figures. Previous discussion has indicated the fallacy of using such factors if a reliable measure is wanted. They all have one fault in common in that they do not have a permanent basis as a starting point.

Before passing to a consideration of a yardstick which, it seems to me, most nearly meets the need of a simple and practical measure for production efficiency, one of the outstanding recent developments for the control of business should be mentioned. This is the budgeting of production and expenditures which is doing so much to force the working out of policies, plans, and expenditures in advance and the following of these predetermined plans in the course of operations. An intelligently made budget serves as an admirable current check on the efficiency of the production or any other department and it is destined to be one of the big mechanisms of management of the future. From its very nature, however, being based on estimated practicable performance during the future, considering as it must many different and changing conditions of business as a whole, it cannot serve as a true or permanent measure of efficiency of production, and constant re-forecasting is necessary to keep it in line with general business tendencies. As is true with any other yardstick, its value depends upon its accuracy, and, unlike the one to be described, it cannot be made sufficiently accurate to serve as a reliable measure of production. It is, however, an admirable guide and spur to achievement.

Standard Task Time as a Basis

It should now be clear that the various attempts to measure production

[8] See G. H. Shepard, *Application of Efficiency Principles*, Engineering Magazine Company, New York City, 1917.

[9] G. Charter Harrison: *Cost Accounting to Aid Production*, Engineering Magazine Company, New York City, 1921. Here are listed wages of operative, time consumed by operative, price of materials, economy in use of materials, transportation expense, cost of power, efficiency in use of power, purchase price of supplies, efficiency in use of supplies, tools, number of hours machines operate, production efficiency of machines when operating, cost of maintaining and operating machines, spoiled work, miscellaneous works expense, with various subdivisions.

efficiency discussed above are all founded on bases which, from a production standpoint, may constantly change and shift beneath us, forcing us constantly to change and shift with them if we are to be able to compare today's achievement with yesterday's or either of these with a standard. Total volume may change, dividends may fluctuate, overhead may overwhelm us, periods of depression and idleness may overtake us, wages, output, and costs may vary, and as these conditions vary, so under all of these methods must our standard vary accordingly. The one unvarying element through it all is time. Time alone plods on at its methodical, unvarying gait. No vault at an even temperature is needed to preserve its accuracy; no secondary gauges need keep it inviolate; no conversion table is necessary to its use. It is international in its language, unmistakable in its significance. It is as available as the air, and commonly as little observed or appreciated. As a fundamental basis on which to construct a measure of performance it would seem to be ideal; the question is just how it may be used to advantage in measuring the work of the production department.

It has been truthfully said that probably the most important element in modern management is the principle of the *task*. This principle, followed to its logical conclusion, means that for each piece of necessary work (unnecessary work being eliminated) there shall be predetermined a standard method of work, and a standard time in which a given amount of work shall reasonably be completed. Implied also is the further requirement of standard conditions such that that work may be performed in accordance with that method in that time. In other words, before we may produce most efficiently we must first accomplish these very constructive measures. The absence of their accomplishment is in itself an indication of inefficiency—the inefficiency inherent in a management which does not know where it is headed nor how rapidly it should proceed. The yardstick of time without standardization (which broadly speaking is simply the determination of what we may reasonably hold ourselves to) can but measure mediocre performance. Since the task itself acts as a spur to greater achievement, its introduction will result in increases in efficiency from time to time which may more reflect the pressure of the task than that of the superintendent or foreman whom we are trying to gauge. It does not necessarily follow that these standard methods, conditions, and times must be the very best known to science in order that the time basis serve this purpose, for what we are measuring is not a theoretical absolute efficiency, but only the actual ability of the superintendent and the people under him to live up to whatever standards are considered practicable at a given time.

In order, therefore, to utilize this measure of time to full advantage we must:

First: Eliminate unnecessary work and determine effective methods for the necessary work (direct, clerical, supervisory).

Second: Standardize equipment and methods.

Third: Determine standard time for all operations where this is practicable.[10]

[10] In the average shop there are comparatively few classes of work which may not be placed on a task basis. These consist largely in service and supervisory functions, which are for the direct benefit of the processing operations practically all of which may ordinarily be placed on task work through careful time study.

Fourth: Plan all work ahead, and select, place, train and cooperate with operatives so that the first and second requirements may be maintained and the third fulfilled in practice.

To be sure, much work is involved in the establishment and use of such standards, but this is also true in the case of many other measures, such as elaborate cost and statistical systems which, as will be pointed out, result in neither the direct nor the indirect benefits which strict standards of time give.

As regards the efficiency of any person engaged on direct processing work, the task may serve simply and directly to measure individual performance. Thus, when an operation is assigned, there is indicated a predetermined standard time, which has been computed as a reasonable allowance for its completion. If, for instance, the task be to process a given number of pieces in 8.0 hours' actual working time including an allowance for rest and unavoidable delays, and the operative completes this number of good pieces in 8.0 hours (effective working time after deducting any time lost through no fault of his [11]) his individual production efficiency is $\frac{8}{8} = 100.0\%$; if it takes him 8.5 effective hours his efficiency is $\frac{8}{8.5} = 94.1\%$. The same sort of comparison, of course, is possible if pieces be used instead of time—that is, the standard is 10 pieces per hour, the workman does only 9, his efficiency is $\frac{9}{10} = 90.0\%$.

When tasks are set as they should be (that is, after thorough standardization of equipment and methods), only the exceptional workers will beat the standard time to any considerable extent. On the other hand, even the best workers will fail to attain 100% unless these standards be maintained, and, as explained previously, delays over which the operative has no control do not count against him. Similarly, when machines, tools, or methods are changed, a new standard time is called for, which may be either more or less than that previously allowed; as long as the operative does the job in the standard time, however,[12] his performance must be set at 100%.

Now, as long as we play fair with the workmen and ourselves in setting tasks and assigning causes of failure to live up to them [13] we have an exceedingly simple and concrete measure of the purely mechanical efficiency of the individual as a productive unit.[14] Expressed in terms of time, we have the answer in the simplest possible terms; any conversion into cost or other terms simply introduces other variables and serves no useful purpose.

Now, as regards the departmental efficiency: If, under standard condi-

[11] The details of how such work is handled in a shop operating under the task method cannot be covered here. It may simply be explained, however, that where changes are not too frequent, for each operation there is prepared a job card on which standard time has been indicated, this card being stamped on a clock and handed to the operative when he is ready to start. If all goes well the operative retains this card until he has completed the operation, when it is returned, stamped again, the actual elapsed time obtained and compared with the standard. If, during the course of work there is an interruption not due to the operative, the duration of this delay must similarly be obtained and kept separate from the net effective working time actually spent by the workman on this job. On the record which shows the duration of the delay must immediately be entered the cause. Where it is not considered practicable to use a separate card for each job, the same result of course can be obtained by grouping jobs, so that under different conditions we may get these comparisons by individual jobs, by several jobs, by a day, or by longer periods.

Footnotes 12, 13 and 14 on the next page.

tions a workman's individual production efficiency may be found by comparing the time which he takes for his various jobs with a fairly determined standard time, it would seem to follow that the total of such individual efficiencies for all the workmen employed at a given time must pretty closely indicate the ability of the superintendent and his assistants (indirect labor) to serve and supervise the department as a whole. For instance, during the day a department might have been assigned 9,000 standard or task hours' work to do, which it completed in 8,920 hours; the efficiency of the department would therefore be $\frac{9000}{8920} = 100.9\%$. This means that although some individual workmen may have fallen below standard (which would be indicated by the individual records) the shop as a whole accomplished an amount of work which previous investigation had shown might reasonably be expected under given conditions. It also indicates, without further computation, that the "standard" direct labor cost must have been attained. While the standard may have been too low (due, say, to out-of-date equipment) the fact remains that under the conditions imposed—out-of-date equipment and other factors which might make this shop rank below its neighbor, and which in spite of carefully set and continuously attained standards might cause it eventually to go bankrupt —the superintendent did a little more than his superiors reasonably expected of him and that his ability as a result-getter as far as was within his means was above par. A new machine or entirely new and better methods may be installed tomorrow; the yardstick is still good, however, because whereas the previous task time may have been fair at 9,000 hours, tomorrow (because of the improvement) it will be fairly set at something less than this, and in either case if the work is done in the time set the efficiency remains at 100%, for although in this case the output may have been considerably increased and the cost considerably reduced, both these things were accomplished possibly through no effort whatever of the superintendent. On the other hand, if 9,040 hours were taken to perform what should have taken only 9,000 hours, the apparent department efficiency would be $\frac{9,000}{9,040} = 99.6\%$. Upon analyzing the causes of the 40 excess hours, it can readily be seen how much of this was due to the superintendent or other officials. For instance:

Loss due to defective castings	25 hrs.
Loss due to lack of maintenance	10 hrs.
Loss due to lack of instructions	5 hrs.
Total loss	40 hrs.

An actual efficiency of the department may thus be determined after eliminating from the calculation the de-

[12] This time, in the case of a new operative who is in process of being trained to the work, might be set at any reasonable amount less than that expected of an old hand.

[13] Of course, if we do not play fair no method of measurement will give us a fair result. One of the big advantages of the task, however, is that it brings tremendous pressure on the management to act impartially and to remove all causes of delay so far as possible.

[14] An operative may be an "undesirable citizen" in several particulars, he may even affect unfavorably the work of his neighbors in the shop, or his own performance may be unfavorably affected by them. His ability to stand on his own feet, however, and do the work asked of him is directly indicated by a comparison of his actual and standard times. What weight should be given to this performance record when considering questions of promotion, demotion, and discharge is a question of relative importance to be settled in each case.

lays not due to the department itself. The seriousness and causes of such losses indicate directly the degree to which managerial action is necessary, just as the absence of such losses indicates satisfactory performance.

The question may well be raised as to just what such a measure indicates, as regards a foreman or superintendent, and what it fails to indicate. There are certain qualities often essential in such a man which the task does not measure, such as his ability to devise new equipment and methods which will increase production and decrease costs. It gives only an indirect measure of his ability to hold his subordinates and reduce absenteeism—in other words he may get maximum production, but he may get it through a degree of "drive" which one cannot approve and which results in high labor turnover. The question as to how far he may be forgiven for such characteristics, because he keeps production up to standard, is another matter.

Less clear perhaps is the question of the amount of indirect labor employed, for 100% performance on the part of the direct workers may be secured at the expense of too many indirect workers. Granted, however, that such service functions are also standardized and placed on a task basis and that every indirect worker is engaged effectively and continuously in necessary work, the departmental ratio indicates to what extent these functions are being effectively performed.

Such qualities, on the other hand, as the temperament of the superintendent, his ability to get along harmoniously over a period of years, his ability to keep production up to standard in the face of general prosperity and a tight labor market, for example, would seem to be very accurately measured by means of this yardstick, as well as his success in selecting, training, and fitting the man to the job, in maintaining standard conditions, and in cooperating with his employees so that standard production may be continuously maintained. It is safe to say that had such standards been in effect generally during the war, the cost of living would not have risen to its exalted height.

Extending the comparison further, it is evident that the ability of the works manager is at least somewhat indicated in turn by the degree to which he is able to secure standard performance from all of his production superintendents.[15] The matter must stop here (with the man in charge of direct manufacturing departments), for when we attempt to go higher we encounter many departments where the problem of measurement is extremely difficult and where neither the task nor any other single measure will give a suitable indication of what we are seeking.

[15] In passing, it may be pointed out that the relative abilities of different superintendents may be thus judged over a period of time even though the tasks in different departments may differ in severity. That is, the standards in one department may be so low that 95 per cent efficiency for the department as a whole is the common thing, while those in another department may be so severe that 85 per cent represents just as hard work and just as effective supervision and service as in the first. After the tasks have been in operation for some time, and the various practicable efficiencies have become known, variations thenceforth in these ratios serve to indicate how continuously each superintendent is able to live up to his record, and furnish a very direct measure in case one superintendent is replaced by another.

THE APPRAISAL OF LABOR "EFFICIENCY"

By JOHN W. RIEGEL

EMPLOYERS in speaking of the "efficiency of labor"[1] have uppermost in their minds the assiduity of workmen in their employ.[2] Labor "efficiency" comprehends more than speed—it refers to the employees' care with equipment, materials, and supplies, their watchfulness in preventing breakdowns, their willingness in executing orders and in adopting improved methods. In fine it refers primarily to the degree to which employees apply their abilities in the interest of the employer.

There is a distinction between ability and assiduity even though the two are closely related. Ability is more constant than degree of application; it is of slow development, and, barring accident or extraordinary personal misfortune, of slow retrogression. It is enhanced, for example, by healthy surroundings, by recreation, by training, by the mitigation of worries, and impaired by such things as neglected bodily disorders, dissipation and repressive influences. Application, on the other hand, is momentary; it is very largely under the control of the laborer. It may be disrupted in a short while by the breakdown of equipment which prevents the "making of a good run," by defective raw materials, by a rumor of an impending layoff, or by abusive remarks of a superior. Conversely, a brief period may mark a pronounced improvement in diligence traceable to a recognition of merit, to the sensing by individuals in a group of an opportunity for advancement, even traceable to an explanation rendering intelligible an operation which formerly was performed without a knowledge of its purpose.

The close interrelation of capacity and diligence is seen when the latter modifies the former over a considerable period. Industry enhances capacity and sloth diminishes it if either is persisted in. A pace at one period of life may cripple future working ability, or hasten

[1] The word efficiency as applied to labor has acquired changed meanings with the passage of time. To the classical economists the "efficiency of labor" related to the quantity of labor required to produce a commodity and bring it to market. If by virtue of a technical improvement less labor was required to produce a unit of a certain article than formerly, the labor thus engaged was deemed to have become more efficient. The labor involved included the efforts of persons who successively procured the raw material, transported it, fashioned it, and marketed it, and also the proper share of the labor that created the appliances with which these persons worked.

Marshall has given the "efficiency of labor" extended consideration. (*Principles of Economics*, 8th Ed., Bk. 4, Chs. 5, 6.) By it he refers to the general and special abilities of the laborers. If they possess sound physique, high level of intelligence and sound moral sense, their general ability is on a high plane. If by training and practice they are skillful in plying a certain calling they possess special ability. The working population is said to be industrially efficient in the degree that it possesses general and special ability.

Neither of these concepts stresses the matter uppermost in the minds of employers to-day, when they speak of the efficiency of labor.

[2] For illustrations the reader is referred to the following discussions of this topic: *Credit Monthly* (National Association of Credit Men), May, 1920; *Greater New York* (Merchants' Association of New York), July, 1920; *Labour Gazette* (Canada), February, 1921, pp. 195-6; Item U-10 of Questionnaire used by Engineering Societies in rating "Waste in Industry,"—see *Waste in Industry*, New York, 1921, p. 47; New York Federal Reserve Bank's *Monthly Review of Credit and Business Conditions*, Dec., 1921, p. 8; *Monthly Labor Review*, July, 1922, pp. 1-12.

its decline. In any case ability must be present to be exerted, and it, as well as a desire to apply one's self, conditions the achievement.

Because the degree of application is dictated proximately by the workman himself, and because of its momentary character, the manager concerns himself with it continually. To society the industrial ability of the working population is of utmost importance, but the individual employer often deals with this matter only now and then in the case of each of his several employees. When the employment contract is entered into an attempt is made to hire persons of requisite capacity. Again, when promotion or interdepartmental transfer of certain individuals is contemplated their capacity is given consideration. The problem of degree of application, on the contrary, is present constantly in the case of every employee, and it is this problem that the business administrator has uppermost in his mind when he speaks of the changing "efficiency" of labor. Moreover, he is thinking of persons in his organization, not of the effectiveness of persons in a number of organizations that along with his own are contributing to the production of some economic good.

I. Inaccuracy and Unreliability of Common Basis of Appraisal

The means most commonly used to appraise labor efficiency is physical volume of production—output per man per hour. This basis of appraisal is preferable to the labor cost basis, since the latter, as time passes, reflects changes in money wages as well as modifications in labor effectiveness. It is preferable also to the findings in "sample" instances, which are open to the criticism of not being representative.[3]

The output per man per hour basis also permits the inclusion of indirect laborers in rating "efficiency." Is it not possible that output may be substantially increased by better planning, better dispatching of work, better maintenance of equipment? Were indirect labor excluded it would share neither censure nor approbation for changes in output, and surely it, no less than direct labor, has contributed to output.

Although the output "index" is probably the simplest and most convenient means of attacking the question of labor "efficiency," it should be recognized that the figures ordinarily available may contain misleading elements.

(1) In many companies a transient force of men is employed now and then to add to the equipment of the company or to make extraordinary repairs to its property. Thus, coal mining companies hire laborers from time to time to aid in the driving of new entries and to do other sorts of "development work." Fluctuations in such forces would have no immediate effect upon output; they introduce a complication that should be corrected.

(2) Cognizance should be taken of working time lost by absentees and by persons just employed or resigned, whose names are on the payroll but who

[3] Data relating to output are more generally at hand than are data relating to "actual times" and "standard times." The latter basis of comparison would be necessary in the study of direct labor doing non-repetitive work, for example, the work done in machine shops and printing establishments that cater to the "jobbing trade." Tasks of this sort, however, seldom have accurate standard times set for their completion, and for routine work the output basis, *considering direct labor only*, would yield the same ratio as the "standard time" —"actual time" comparison. For the same period

$$\frac{\text{Standard Task Time}}{\text{Average Actual Task Time}} = \frac{\text{Actual Output}}{\text{Standard Output}}$$

have worked only a portion of the weekly schedule of hours.[4] The normal weekly schedule should not be used in case there was either overtime or part time operation.

(3) Care should be taken that comparisons are based upon the same products at the different periods.[5] If the company had been producing the same items since the figures used for purposes of contrast were gathered, no adjustment would be necessary in this respect. If the output of the whole plant is tabulated, corrections might have to be made for products added to or withdrawn from lines previously produced. If the company has started to produce raw materials or supplies for itself, provided these had been purchased in former times, the investigation should not disregard such changes.

(4) In some situations it is impossible to do more than allocate man hours to output, notably where there are joint products of a single process. In such cases the same basis of allocation should be adhered to in successive studies.

(5) An irregular relationship may exist in successive periods between the number of man hours worked in the plant *as a whole* and the output of finished product. This is likely to be the case in industries whose processes are spread over a number of months. An example is found in the tanning of leather by means of oak bark—an operation requiring approximately a half-year. More laborers engaged in the preliminary "beam house" operations will have a delayed effect upon the output of tanned leather from the pits.

These comments upon the output index are, after all, not of major importance; they stress the likelihood of a margin of error in the figures which should be recognized. Of more consequence is the question whether the figures obtainable, allowing for the margin of error, are a reliable "index" of labor efficiency.

A fundamental consideration is that output is a resultant not only of labor "efficiency" but of the functioning of production factors other than labor as well. The true nature of a *production unit* should not be overlooked.

A production unit may include a wide or a narrow area, whichever is more appropriate for the purpose in hand—it may be a workplace, a department, an entire works, several plants under a single management. The unit in every case, however, comprehends the several agents of production in combination. The part played by each agent would be impossible were it segregated from the other agents. A production unit is an arrangement dominated by managerial ability, which permits an interaction between it, the efforts of laborers, the contributions and forces of nature, and the

[4] Although absentees would be noted, in deriving the figures for man-hours worked, it cannot be assumed that this refinement would discount properly the loss in production incident to absenteeism and tardiness. These practices disorganize the working force in attendance, which must be readjusted to the work in hand. The output which might be expected, considering just the number of workmen in the shop, is not forthcoming.

[5] In a reply to a questionnaire asking for "experience in the matter of per capita production since 1914" one manufacturer said:

"The character of our product has changed so much since 1914 that there is no way that a comparison can be made such as you mention. Not only this, but the shoes that we are making now are very much different from what we made a year ago, and the shoes we made a year ago were very much different from those we made the year before." The same reply interprets the term "efficiency," the writer saying: "I believe that the average efficiency of the operator has increased very much. In other words, I believe *that he is working more conscientiously* than he did in 1914. —Commons *Industrial Government*, pp. 365-366.

services of implements, with a view to bringing some economic good into being. Whatever this product or service, it is these factors' joint creation.

A production unit is analogous to an organism; certainly it is to be regarded as a vital affair. Its activity is conditioned by the proportional balance and healthy reciprocal action of its constituent members. Moreover, its activity is conditioned by its surroundings. No production unit is self-sufficient; each reacts upon many others and in turn is influenced by many others. The effectiveness of any one plant is influenced by the operation of other plants from which it buys, upon the working of marketing arrangements, transportation systems, the facilities of communication, the dependability of local public service enterprises, and so on. Just as between plants, this interdependence exists between production units of smaller size. Each workplace or department is assisted or retarded, as the case may be, by other production units coöperating with it. All jointly fulfill their several purposes.

It is not difficult to find illustrations of assumptions by writers on industrial management topics that output per man per hour and the "efficiency" of the laborers varied in direct, and *exact* ratio. In fact this is part of the theory underlying piece-work and is implied in the usual use of the phrase "limitation of output." Occasionally one finds output per man per hour and "labor efficiency" used interchangeably.[6]

In view of the nature of a production unit, how close a relationship can one assume exists between *its* output and the diligence of the laborers, parties to it?

In the case of the workplace manned by an individual worker it is often held that output measures the man's "efficiency" exactly. Manifestly this is true in the degree that labor "efficiency" is the only variable in the production unit affecting output.

Where it is maintained that variations in physical surroundings have been reduced to negligible importance there may still remain less obvious variables. As illustrations of these may be mentioned the variations in the demeanor of the foreman, in the willingness of the movemen,[7] in the prospects of promotion or layoff, in the group opinion of the shop —that is, the effect upon a workman of the opinions of his fellows. These matters, and many other intangibles, affect the output of a workplace despite the uniformity of materials furnished to it or of appurtenances with which it is equipped. And it may be questioned whether the effect they produce can be attributed to labor "inefficiency."

In considering the output of a larger production unit—a department or entire works—one would encounter numerous variations that influence output per man per hour other than the volition of the laborers. Certain of these variations are related to the ebb and flow of the business tide; others are more casual.

[6] The presentation of the Emerson wage plan is usually accompanied by a table showing the "percentage of efficiency" upon which payments are based. See Jones *Administration of Industrial Enterprises*, pp. 283 (1917 edition). This percentage of efficiency really relates to "actual output" contrasted with "standard output" of a production unit. In the October, 1922, issue of *Factory* there is presented a diagram to illustrate the application of certain wage plans. This diagram has one scale for the "percentage of efficiency," but the reference doubtless is to the number of pieces produced in the specified time by the production unit with which the employee is identified.

[7] "Movemen" transport raw materials, worked materials and supplies to and from workplaces.

II. Cyclical Variation in Functioning of Management

In boom periods management finds it increasingly difficult to perform its functions properly. The individual business house experiences a breakdown in the grade of service it ordinarily receives from other producing organizations. In the markets for materials and supplies demand is active—made apparently greater by the practice of pyramiding orders—supply is tardy, and made more so by car shortage, congestion on the highways of commerce, and speculative holding. Management may be unable to furnish a steady flow of standard materials to the other factors in the production unit. The shortage compels it to accept substitutes, probably from unseasoned firms that yield service inferior to that afforded normally by well-established companies.

The administrative staff is likely to be in process of reorganization at the same time. Expansion necessitates the hiring or promoting of men to fill supervisory positions, and thus the staff is made up of unseasoned men in relatively large measure. (This is the period during which many foremen go into business for themselves or accept positions in new ventures, leaving vacancies to be filled.) The new executives must become known to their associates and subordinates, and acquire that detailed knowledge of operating conditions which is a prerequisite to effective foremanship.

Not only is the management staff impaired, but it frequently fails to afford to all workers the proper facilities for carrying on production. Employees added to the force during a prosperous era are asked at times to work in temporary quarters with improvised facilities. They may have to use antiquated machinery in warehouses, basements or lofts. Moreover, persons employed under arrangements of this character are idle occasionally on account of a lack of balance between the output of each of the several processes carried on in the establishment.

The management may ask laborers to work longer hours when business is brisk. In most cases less work is done in an overtime period than is accomplished in an equal length of time during regular hours. The usual tasks of modern industry are not of a creative, but of a routine nature. Protracted application to them gives rise to ennui, probably the fundamental cause of fatigue. At times a night shift is established. One study made of the subject indicates that night work yields a smaller output than day work, this being particularly true when the tasks are exacting.[8] Frequently the establishment of an extra shift is possible only by distributing the key workers between the shifts, thus diluting the quality of the force assigned to each shift.

As the management becomes unable to maintain standard conditions it finds piece-work or other forms of incentive wage calculation increasingly difficult to justify to the laborers. Consequently it may introduce day-work or relax the wage scheme in use. The modification has two results pertinent here. Day-work does not single out the incompetent or unindustrious employees automatically, and it is a less potent stimulus to exertion than is piece-work.

III. Variation in Average Ability of Laborers Employed

Not only is there a cyclical variation in the ability of the management to maintain constant the factors (including

[8] *Public Health Bulletin No.* 106—U. S. Public Health Service, Washington, 1920, pp. 152-154.

itself), other than labor, but there is a cyclical variation in the capacity as distinguished from the assiduity of the average laborer employed.

When prosperity is increasing, jobs are plentiful. Employers bidding against one another for labor stimulate the flux in and out of employment offices. The wage-earners also play their part; many who had feared to quit their employment previously, and which for one reason or another they have come to regard as unsatisfactory, are now able to seek other jobs with little risk. So there is an extraordinarily large proportion of the wage-earning group indulging in "shopping for work." Students of labor turnover have said that the turnover rate in times of prosperity is frequently two or three times the rate in periods of depression.[9] In consequence business enterprises in boom periods are manned by an abnormally large proportion of "new men."

These new men lack "special ability" for their specific tasks; without question the unusual proportions of their group have an effect upon output per man per hour. The lagging production of newly hired workmen has drawn much comment in recent years. They do not attain standard production on specialized tasks until after a training and practice period which lasts generally from one to six months, depending upon the skill and adaptation required of the newcomer to master the task.[10] One cannot assume that "rough handed" work is readily learned. The locomotive firemen, to a less degree the men making bottom in an open hearth steel plant, attain their special proficiency gradually with continued practice.

There is another reason for the diminished capacity of the average employee during an era of prosperity. The "eligibles" for certain jobs having been snapped up, the employer soon learns that continued bidding up of wages brings few additional eligibles into the labor market. It affords slight relief and further stimulates labor turnover. Then he relaxes his requirements, and begins hiring people of lower capacity than those he customarily employs. This practice has been dubbed "labor dilution," and during the recent war it was carried to an unprecedented point. Juveniles, women unaccustomed to industrial pursuits, superannuated employees, casual laborers, were inducted into industry. Many of them were given courses in "vestibule schools"; others were coached by fellow workers whose productive worth was reduced meanwhile.

In an era of declining prices a reverse process takes place. Employers then lay off the "least productive" laborers, trying to retain a skeleton organization of picked men. Probably this may be termed "labor concentration."

It is submitted that output-per-man-per-hour figures are not strictly comparable for the purpose of judging the diligence of labor when derived under such dissimilar conditions—when one record is made by a force diluted in quality; the other by a force subjected to rigorous selection. Even though the figures would show a greater output per man per hour in 1921 than in 1919 they could not be said to indicate a propor-

[9] Slichter—"Turnover of Factory Labor," p. 32; Brissenden & Frankel in *Political Science Quarterly*, December, 1920, pp. 580-586.

[10] Tables relating to the lagging production of newly hired workers on various tasks in a large shoe manufacturing establishment may be found in "Labor Turnover Costs in a Large Shoe Manufacturing Company"—Graduation Thesis by Robert R. Haskell, Harvard Business School—1921—Reprinted in part in *Waste in Industry*, p. 159, New York, 1921.

tionally higher degree of application to their tasks by *the same* working force in the year of depression. The truth of the matter rather would be that the figures indicated in part the greater capacity of the average man *in* the working force in 1921.

IV. Other Influences Affecting Output per Man-Hour

There are other variables influencing the output of a production unit—say an establishment—which are less closely connected with the ups and downs of business. The first of these comprehends all improvements in the arts of production. Here would be grouped new modes of processing, the introduction of better mechanical apparatus, the devising of special jigs and fixtures, the discovery of more effective formulae, the use of better raw materials for the particular purposes in question, simplification of operation through research, and so on. Usually these changes result in increased output relative to the number of men employed.

No one would attribute the increased annual tonnage output of pig iron per man employed at American blast furnaces in the first fifteen years of the present century to increased labor "efficiency" solely, nor even hold that the laborers working around the blast furnaces had a major part in it. This increase, from 370 to 790 tons,[11] is predominantly due to improved manufacturing technique. This illustration is paralleled by many improvements of a less striking sort that should not be disregarded if output is used as an indicator of the laborers' diligence. A majority of the improvements in the industrial arts are not spectacular; little by little the refinements are made which culminate in an "entirely new type" of machine or a "revolutionized process." Improvements and inventions do not make their appearance in recurring cycles, however; they are occasional in consummation and application.

Another casual variable is the rotation in office of policy forming executives. While this rotation is in progress continually in the business world, it takes place only at irregular intervals in the individual producing unit. Resignation to take up work elsewhere, retirement and death cause changes now and then in nearly every organization, which, on account of the position of the man who has "passed on," shake it to its very roots. Assume that a manager who plans to get all the profits possible out of the property for a few years replaces one who has built up a splendid esprit de corps among the company's employees. Gradually the new policy at the top will have its effect on the rank and file; grievances will accumulate and the good-will of the workmen will be supplanted by distrust and antagonism. In how far do output figures under the two régimes indicate a change in the assiduity of the laborers?

The change in the management's character may be of an opposite sort. The new officials may rehabilitate a previously misdirected enterprise. Its output or service rendered begins to improve quantitatively and qualitatively. Surely no one would say that the improvement has been due only to the laborers' efforts. But what part of it should be attributed to the laborers' efforts? Under present conditions the increased product is impossible of fractional apportionment among the men

[11] Calculated from figures in *Abstract of Census of Manufactures*, 1914, pp. 98 and 640.

and women who labored together to achieve it.[12]

At irregular intervals a company may modify its manner of treating with labor problems. A general custom is to delegate practically all labor problems to the foremen. Each department is regarded almost as a separate organization. Standards may vary considerably between departments, and one foreman at times may hire men away from another foreman in the same works. Within the last few years some establishments have tried the scheme of having certain persons in the organization specialize upon the analysis and treatment of the company's labor problems. The reasons for the change sometimes mentioned are that ordinarily the foreman is too busy with other matters, or does not have the perspective necessary properly to attend to this type of problem, and that there must be a consistent labor policy throughout all departments of the plant.

Recently certain companies have modified the traditional form of employer-employee relationship. Plans of employee representation have been inaugurated to afford members of the rank and file a better means of expressing their views on wages, hours, working conditions, disciplinary measures, etc. Sometimes a safety committee has accomplished a similar purpose. The joint relations established by such means are both organized and recurrent; they facilitate the interchange of views and they tend to bring incipient difficulties to light, thus prompting the correction of these difficulties at an early date. Many constructive experiments along these lines are making the relationship between employers and employed more than an exchange of work for pay.

Labor managers, works councils, or other arrangements that have led to better industrial relations doubtless have affected output per man per hour favorably, yet the connection between them and output is uncertain indeed. The extent of improvement due to such changes is not determinable, nor can the improvement be split up and credited to employer and employees respectively.

Industrial warfare also may be included with the occasional factors that would complicate an endeavor to interpret output figures in terms of the diligence of labor. Many persons hold that strikes are more serious in good times, and hence that labor troubles vary directly with the volume of business. During a boom period there are more strikes in point of numbers, but most of these are short lived. The increased costs involved in concessions to the strikers very likely can be passed on to the buyers, and a compromise is arranged rather promptly. In periods of retrenchment there are numerically fewer strikes, but they are longer in duration on the average, and they are contested more bitterly. From the laborers' standpoint these strikes aim to maintain a standard of money wages or to hold to a bargaining status acquired during the preceding boom period. The employer feels the necessity of reducing his prices on the falling market and, moreover, he has less to lose at the time in closing down his plant and making the dispute a fight to a finish.

Comparisons on the basis of mendays lost in strikes and lockouts do not properly indicate the measure of decline

[12] In 1911 the operating management of the Philadelphia Rapid Transit Company was changed. In 1919, as contrasted with 1910, the new management was employing 15 per cent fewer trainmen, was paying 150 per cent higher wages to trainmen, was receiving 3 per cent less revenue per passenger carried, and was carrying 120 per cent more passengers per trainman.

in physical production due to industrial warfare. These comparisons usually are calculated on the assumption that if no strike had occurred the establishment would have operated full time with all hands. This is by no means a certainty. Moreover, production may be impaired for an extended period prior to the actual break. A short strike of a few days may clear the atmosphere after months of strained relations, which have been at the bottom of a condition of unsatisfactory output, both from the standpoint of quantity and quality, all the while. At present, output losses due to industrial warfare are matters of conjecture rather than determinable quantities.

The significance of industrial warfare in this connection, however, is its effect over a much wider area than the actual scene of hostilities. The strike in the coal mines last year had almost inconceivable ramifications. While this is a case of unusual complexity, it illustrated the consequences of industrial strife on a large scale. A strike in the plant of a producer of semi-finished materials may and often does disrupt production in the plants of his customers—the manufacturers who utilize his product in creating other commodities.

V. Uses and Limitations of an Index of Labor Efficiency

Output figures thus reflect not only the assiduity of the laborers but also the functioning of the other factors in production. Such figures are affected by the cyclical variation in the ability of management to maintain proper working conditions and supervision, the cyclical variation in the ability of the average laborer employed, and over longer periods by occasional variables such as improvements in method and changed industrial relations, and over still longer periods by the exhaustion of natural agents, as in the case of mines that are driven deeper and deeper.

In view of these complicating matters, output figures should not be used for rating labor "efficiency" without recognizing their limitations. At the present moment, danger is involved in assuming that some superficially attractive "measuring device" is adequate and accurate; in advancing opinions on labor "efficiency" without the reserve proper in view of the margin of error that is present; in passing judgments of this sort without foreseeing that the men and women spoken of collectively will react to the pronouncement.

A more promising line of action would relate less to the checking up of labor "efficiency" by means of the output of the production unit; it would be concentrated upon the adjustment of matters within the management's control that influence the laborers' will to produce.

There are many external influences which, from the standpoint of the management of a particular production unit, are independent occurrences. The management should seek to counteract those that are adverse. Thus, workmen may depreciate the incentives and exaggerate the human costs attached to their tasks because of a wage increase elsewhere, because they notice advertisements signifying a shortage in the locality of members of their own craft, and even because they note that the directors have voted an extra dividend to stockholders while their money wages have remained constant. On the other hand external happenings may be favorable. Laborers may depreciate the human costs and magnify the satisfactions associated with their tasks on account of layoffs or "short time" in other plants in the same labor market or in-

dustry, or on account of an unsuccessful strike elsewhere to obtain the working conditions that they already enjoy, but which heretofore they had not appreciated.

Wages are the most important of the incentives that are largely within the control of management. Over extended periods the independent variations of wages elsewhere and of living costs would cause the "psychic worth" of the same money wage to fluctuate. In the main, however, employees with rising standards of living, or the desire for a higher standard of living, are energized by wage increases. But it is impossible to say that the increase will yield a proportional increase in "efficiency."

On occasions this generalization is found not to hold—there is no increase in diligence following an increase in wages. Several reasons may explain the situation. The stimulating influence of the higher money wages paid in a period of prosperity rests upon their comparison with lower wages received formerly. In so far as the increase is, or to the individual appears to be just commensurate with current increases elsewhere, the heavier pay envelope may do little more than convince him that he is holding his own. In the second place, a small proportion of employees, with fixed standards of expenditure, take days off when full time earnings would yield them more than is necessary to meet their expense budget. Both of these reasons taken together would not be adequate to account for the scale on which the "paradox" is manifested; the failure of increased money wages to cause increased effort is, in large measure, due to a changed interpretation by the employees of the connection between the money wage and their efforts.

When price and wage levels are relatively stable, the connection between output and earnings is emphasized. With piece-workers it is stressed by the mode in which the wage is calculated. With day-workers the selective process of retaining only the more willing and competent individuals serves to indicate a relationship between diligence and earnings.

When prices and wages are fluctuating, the case is different; then the interrelation may be temporarily overlooked. At such times workmen experience money wage increases or decreases that cannot be explained by corresponding and simultaneous changes in their exertion. They do notice, however, that wages are closely connected with the state of business, and that the level of money wages seems to bear an inverse ratio to the numbers of men out of work. Very often they conclude that a plenty of labor is the sum and substance of the explanation of low wages. This belief on their part may be confirmed by the common custom of employers of justifying decreases in wages or refusals to increase wages by nothing more than a reference to the applicants for employment at the gate that are willing to work for the wages offered.

The belief that numbers of men out of work are the "real" regulator of wages is largely responsible for the workers actively attempting to regulate the amount of work they do, in order to influence their wages. Thus a contrived inverse relationship instead of a direct variation may exist between the dollars in the pay envelope and the energy yielded in return for them.

It would seem that the proper attack on this interpretation of high wages would be a patient effort to explain its demerits in simple terms and, secondly, a wage system, sensitively adjusted to

the variations in the purchasing power of the dollar, which recognizes personal ability through an individual basic wage, and which, wherever possible, combines the feature of compensating diligence on the part of the individual or group in any production unit.

Regulation of diligence by the laborers is also engaged in, at times, as a means of mitigating unemployment. The relationship between the fear of unemployment and output is more readily understood by bearing in mind the distinction previously made between ability and assiduity. Irregular work tends to reduce the laborer's capacity by impairing his habits of work, and by the worry it occasions. Recurring periods of joblessness break down his self-respect, blast his ambitions and embitter him against the present economic system. When employed the laborer may attempt to prevent or defer unemployment by retarding his efforts, and in time this retardation may become habitual, thus really reducing his working capacity.

In contrast to the effects of fear of unemployment upon capacity we may note its effects upon assiduity. Increasing fear of unemployment at a given time increases the degree of application of *many men then employed.* The "efficiency" of these men becomes greater than it was during the era of prosperity. When the signs of oncoming depression appear the tacit understanding to "spread out the job" is abrogated. No arrangement of this sort may exist; the slow pace simply being a result of the very widespread tendency on the part of human beings to "take things easy" when the penalty for doing so is slight or remote. When the prospect of unemployment appears, any understanding to regulate diligence is likely to be forgotten. Each individual seeks to deflect the impending layoff from himself; he works furiously, trying to convince his employer that he is a man too good to lose.

Consensus of opinion supports those who maintain that the likelihood of unemployment increases the average relative "efficiency" of the laborers employed.[13] The few who hold that unemployment diminishes "efficiency" and who really mean that it tends, over a number of years, to impair *the capacity of the working population* are probably correct also. Whether the output of production units generally would be greater or less than it is were the fear of unemployment greatly reduced is, of course, a question to which there can be no conclusive answer.

The policy of paying careful attention to the regularity of employment is eminently worth while. Larger output is likely to be achieved through the employees' satisfaction in the relatively greater security of their working opportunity as contrasted with that of other workmen. The effort to regularize work should also enhance capacity by reducing worry.

A positive measure of utmost importance is the maintenance of a group of minor executives of high grade. Breadth of view can be fostered and interdepartmental friction reduced by foremen's meetings. At these gatherings the manager can emphasize the general policies of the company and encourage interchange of experience on supervisory problems. The effort should be made to develop foremen that are primarily leaders—giving them, if necessary, assistants whose technical ability supplements their own.

[13] See analyses of opinions solicited on this subject in reports cited in footnote on page 341. Also Introduction to *11th Special Report of Commissioner of Labor,* p. 22.

Some other incentives to exertion are opportunities for promotion, appreciation of the purpose of the work engaged in, and a plan of merit rating that enables persons in the several production units to note the performance of their units, which ratings should also come to the attention of the manager. Rewards should always be determined on principles acceptable to both management and men, thus reducing personal favoritism to the minimum.

Supplementing positive incentives the management should endeavor to reduce repressive influences by giving attention to working conditions, plant housekeeping and sanitation, and correcting, as far as possible, hazardous or disagreeable processes. Another series of impediments to wholehearted application to the task, namely unsettled grievances, may be greatly reduced by affording the employees a channel of expression—something more than an easily swinging door to the general manager's office.

This phase of the discussion should not be closed without a reference to unionism. Some hold that unionism uniformly results in "inefficiency." Instances can be cited, it is true, of union rules that diminished output, but the sweeping charge mentioned is untenable.

The fact is, however, that unionism stresses "distribution problems" rather than production problems. It has dealt and continues to deal primarily with the dividing—the allocation—of the joint earnings of production units rather than with the creation of these earnings. A consequence of this fact is that, whether rightly or wrongly, men and women who are brought into contact with unionism have their attention drawn from physical productivity to bargaining effectiveness. It is probable that this shift in the relative attention bestowed on "production" and "distribution" has its effect on visible output.

VI. Conclusion

To sum up: Labor efficiency is dictated proximately by the laborers' wills and feelings; in this regard their minds must not solely be thought of as functioning separately, but also as interacting upon one another. The resultant degree of "efficiency" is an indirect consequence of countless interlacing impressions and experiences sensed by the laborers; it reflects in part their state of health at the time, their beliefs, their feelings derived from comparisons of their lot with what they deem the lot of other laborers, and with what they recall as their former lot. It reflects their opinion of the boss, the company, the purpose of their work—even the presence of an irrepressible optimist among them. One of management's chief problems is to sense these forces, numerous as they are; to encourage those that prompt, to offset or reduce those that impair the laborers' diligence and cooperation.

While a device for appraising efficiency affords a rough check on the success of such endeavors as a whole, the management cannot closely identify from an output figure the specific causes for an increase or decrease in "efficiency," nor their relative importance.

The use of an "efficiency index" as an argument to employees—probably as a mode of censuring them—is unlikely to be of benefit. The basis of rating relates to one standard of effectiveness, whereas in the business world, due to the division of labor and the consequent phenomena of exchange value, another standard of productivity is more potent in dictating the day-to-day policies of the persons participating in production. Objective indices of labor

efficiency relate to the quantity of goods created or of services rendered; the other standard of productivity refers to the net financial returns derived from operation. This second standard does not imply operation at maximum volume necessarily, but at the rate deemed most advantageous considering the conditions of the market. Under present arrangements there is a degree of inconsistency in measuring the diligence of labor by the one standard and the effectiveness of the business as a whole by the other standard. Although laborers are urged to produce according to the volume criterion, management must regulate opportunities to work and the scale of operations by the value criterion—net earnings. The sharing of profits, over and above operating costs which include a cumulative return at a fair rate on invested capital, may aid in correcting the inconsistency.

Output figures enable management to do no more than roughly appraise the assiduity of labor. To be of advantage these ratings must be supplemented by positive measures bearing upon the motives and reasoning of the employee —upon the human costs and gratifications that he finds associated with his work.

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The first Department, "Summaries of Business Research," comprises summaries of the results of the investigation of various business subjects. "Case Studies in Business," the second of these Departments, was suggested by one of the outstanding characteristics of the Graduate School of Business Administration, the case method of teaching. Case studies are based upon the actual experiences of business concerns; to avoid disclosure of confidential material, however, it is necessary to disguise the names of the concerns. The last of the Departments contains critical reviews and short descriptions of new books of interest to business men.

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SUMMARIES OF BUSINESS RESEARCH*

PRESENT LENDING POWER[1] OF THE BANKS OF THE UNITED STATES

THE distribution of unused and readily available bank lending power of the country as it is divided between Federal Reserve Banks and other banks is important. The significance of the relative proportions held by each lies in the ability, or lack of ability, of the Federal Reserve Banks to control directly any expansion which may take place in the near future. If there is a substantial amount of readily available lending power outside of the Federal Reserve System, then the latter will have little influence over expansion until it has gone well beyond the initial stages of development. On the other hand, if any substantial increase in loans can be made only by resorting to the Federal Reserve Banks, they will have immediate control of any approaching inflation and will be in a position to regulate it effectively.

There are four important sets of data which furnish a basis for calculations; namely, figures for all banks reporting to the comptroller of the currency once each year; figures for national banks, on five dates[2] of call each

CHART I

Loans and Discounts to Earning Assets

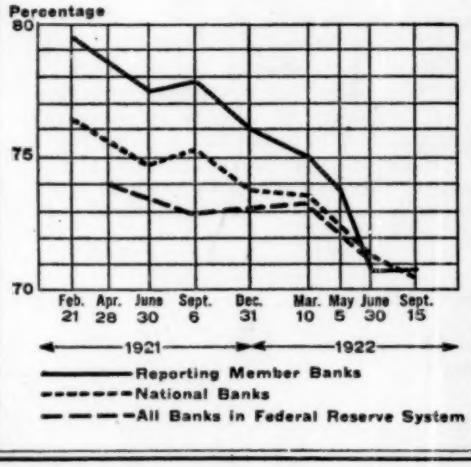
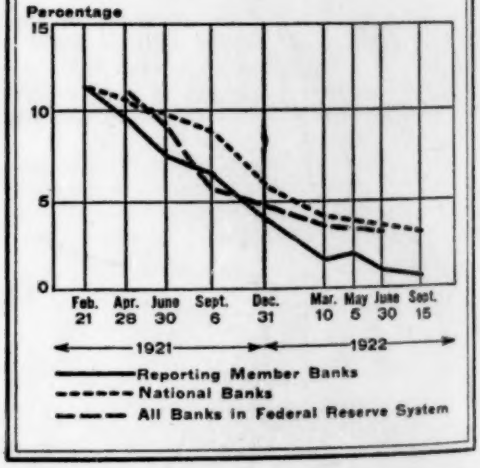


CHART II

Rediscounts and Payables to Earning Assets

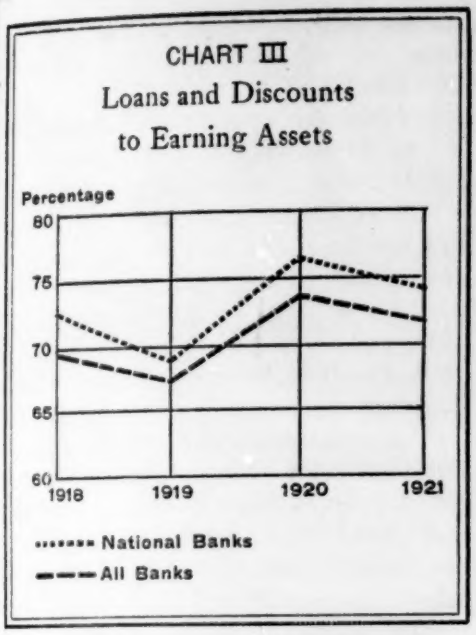


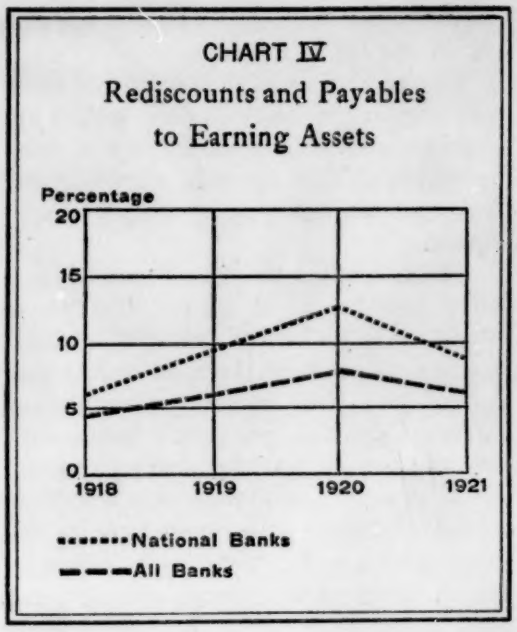
* In the study of "The Extent and Significance of the Railroad Car Shortage" in the January issue, Volume I, No. 2, of the HARVARD BUSINESS REVIEW, the second paragraph from the last on page 229 should read as follows:

"Eastern roads 11% more cars than they owned. "Southern roads 2% more cars than they owned. "Western roads 11% less cars than they owned."

[1] This study was concluded in January, 1923; consequently only data available at that time were considered.

[2] See next page.





year; figures for all Member Banks of the Federal Reserve System, reporting three times a year; and figures for Reporting Federal Reserve Member Banks, reporting weekly. Charts I and II show the recent trends in the ratios of Loans and Discounts to Earning Assets and of Rediscounts and Payables to Earning Assets for three classes of banks. It will be noted that in both charts the three lines follow the same course. Annual figures are the only ones available for all the banks of the country. These can be compared to best advantage with those of National Banks. Charts III and IV reveal the similarity of movement from 1918 to 1921 for these two classes.

These several comparisons are significant because they prove that we may use the most recent figures, namely those for the reporting Member Banks, as an adequate picture of the banking system of the country. There are some items, however, not reported currently, the most recent figures for which are contained in National Bank reports. Since these, too, give a reasonably accurate picture, as evidenced by the charts, they will be used as indicative of conditions.

The four important items on a bank's balance sheet, which may show readily available lending power are: cash, reserves with designated depositories, inter-bank items, and investments.

Table I, for reporting Member Banks, shows that cash in vault remains about 2% of total deposits. Such an amount is only "till" money and cannot be considered as a source of available lending power.

Neither do the balances with the Federal Reserve Banks indicate surplus funds. These balances are kept as close to the legal minimum as is practicable. This is clearly shown by Table II, compiled from National Bank figures. The required percentage of reserve is shown in the first column with the actual de-

[2] Under recent legislation these dates of call have been reduced to three.

posits in the Federal Reserve appearing in the other columns.

The central reserve city banks show a larger excess reserve than would appear necessary at present, but it must be admitted that the sum available for lending from this quarter would be negligible.

"Balances due to other banks" represents two types of items: first, those which are necessary for the general conduct of banking, such as checks and collections; and second, amounts of money deposited by country banks with city correspondents for better employment of such funds than is possible at home. In times of business activity the latter play a relatively insignificant part, but in times of ease large amounts are sent to the large cities, especially New York, for employment in "call" loans. For National Banks in New York City the low point in "due other banks" occurred in April, 1921, when the amount fell to $673,000,000. Since then it has risen, until in September, 1922, it stood at $837,000,000. For all National Banks the low point was also reached in April, 1921, when this item stood at $2,088,000,000 and since then it has steadily increased, until in September, 1922, it amounted to $2,614,000,000. In the latter case it is an increase of 25.2% as contrasted with an increase of 24.4% for New York City banks. These increases denote the accumulation of funds which can be drawn on with a fair degree of readiness. This increase in funds available for use on the New York Stock Exchange, however, did not produce such a softening of rates as in previous years of post-depression money ease. In former cases it was not uncommon to have rates drop below 1% and for considerable periods to hover between 1% and 2%. Such has not been the case during the past two years, during which the lowest monthly average of 3.88% occurred in July, 1922,[3] and consequently it would seem that the excess contained in this item was not large.

The remaining item, which may contain lending power, is that of investments. In October, 1920, the investment holdings of 820 reporting Member Banks amounted to $3,289,000,000, which was 19.2% of total loans, discounts, and investments. On January 10, 1923, the total investments for 781 reporting banks stood at $4,684,000,000, or 28.7% of total loans, discounts and investments. This increase apparently indicates a substantial reservoir of lending power. Of the investment holdings at the later date $2,491,000,000, or 53.5% of the total was in government obligations. Of this, $998,000,000, or about 21.3% of total security holdings, was in Victory notes, treasury notes, and certificates of indebtedness. Investments of this type seem to offer a good opportunity for liquidation in a fairly short time. Who, however, would provide the money to take them up? The market is con-

[3] Survey of Current Business, compiled from the *Commercial and Financial Chronicle*.

Table I. Cash Position of Reporting Member Banks. (000,000 omitted)

Date	1/4/22	4/5/22	7/5/22	10/4/22	1/10/23
Total deposits	$13,684	13,735	14,680	14,879	15,495
Cash in vault	$327	273	296	282	317
Cash to deposits	2.39%	1.98	2.02	1.89	2.04

Table II. Actual and Required Reserve for National Banks

Central Reserve	Required	2/21/21	4/28/21	6/30/21	9/6/21	3/10/22	5/5/22	6/30/22	9/15/22
Cities	13%	13.03	12.91	12.02	13.15	13.45	13.74	12.73	15.11
Reserve Cities	10%	10.33	10.27	10.22	9.83	10.27	10.46	10.30	10.03
Country Banks	7%	7.47	7.54	7.52	7.34	7.51	7.47	7.50	7.59

stantly being supplied with new issues of municipalities and corporations, which it is absorbing with varying degrees of readiness. What would happen if several hundred millions of additional securities were thrown on the market? Some of the securities could probably be taken care of through savings now in the form of cash, but by far the larger part would have to be financed by means of credit. This credit would have to come from the banks, with the result that the additional demands from customers, caused by such selling, would leave little extra for commercial expansion. Further, such liquidation would depress prices, would make the banks the more unwilling to dispose of their holdings at a loss, and would force them to obtain their funds at the Federal Reserve Banks where the money could be procured more cheaply.

The same result to a smaller extent would follow a move to liquidate interbank items. A drop in security prices would follow extended calling of loans; this condition would make it more difficult for the banks to sell their security holdings. Again, for the banking system as a whole, money would have to come from the Federal Reserve System or else the banks would be left in a position little superior to that before the attempt at such liquidation.

We must conclude, therefore, that the present lending power of banks is being utilized almost to capacity and that, while it is possible for some expansion of loans to take place without resort to the Federal Reserve Banks, it will be impossible for any large increase to occur other than in this manner. As a result of this situation the Federal Reserve Banks are now in such a position that any substantial increase of loans must come directly from them and they will be able to control expansion and in a measure to limit its course.

GOING VALUE AS AN ELEMENT IN THE VALUATION OF PUBLIC UTILITY PROPERTIES

THE exercise of control over public service corporations through governmental regulation creates the necessity for an equitable valuation of the property of these enterprises. To fulfil their legal obligation, to permit a return on the fair value of property devoted to public use, the regulatory commissions in fixing service rates must establish monetary values for such property as a base for the computation of a fair return. The importance of

these valuations is indicated by the great volume and widespread ownership of public utility securities and the universal use of the services furnished by the utilities. The financial interests of nearly every banker and investor are involved in the determination of the value upon which a return is to be permitted, while every citizen and every business is concerned in the valuations because of their effect upon the rates charged for utility services.

Among the various assets, tangible and intangible, upon which the utilities have claimed the right to earn a return, few have occasioned greater controversy than the item of going value. The current uncertainty regarding its existence and the large values claimed for it, if allowed, justify particular consideration of its valuation.

Current Valuation Practice

The current practice of making some allowance for going value in each valuation is founded on the recognition of its existence in several leading court decisions rather than upon any reasoned theory. That the bases for determining its amount used by the several commissions vary greatly is explained by this fact. Among the leading court decisions are the Des Moines gas case,[1] the Denver waterworks case,[2] and the Galveston electric railway case.[3] In the first case the United States Supreme Court stated that "the element of value in an assembled and established plant, doing business and earning money, over one not thus advanced is self-evident," and this statement was cited with approval in the second. In the third and most recent case, a proposed allowance for going value as indicated and measured by early deficiencies in revenue was excluded from the rate base by the court. But the going value concept was not discussed in detail nor was there consideration of other elements than the accrued deficits, since these were not raised by the facts before the court in the particular case.[4]

No single method of measuring the amount of going value where its existence is recognized has yet been accepted by the various commissions. This is evidenced by their divergent practice in deciding cases involving its valuation. The Interstate Commerce Commission in its valuation of the railroads seems to have added five per cent of the physical valuation to determine the final valuation and this allowance included going value and other intangibles.[5] The Illinois[6] and Indiana[7]

[1] *Des Moines Gas Co. v. City of Des Moines.* U. S. Supreme Court, June 14, 1915. 35 Sup. Ct. Rep. 815. "That there is an element of value in an assembled and established plant, doing business and earning money, over one not thus advanced is self-evident. This element of value is a property right and should be considered in determining the value of the property upon which the owner has the right to make a fair return when the same is privately owned though dedicated to public use."

[2] *City of Denver v. Denver Union Water Co.; Denver Union Water Co. v. City of Denver.* U. S. Supreme Court, March 4, 1918. 38 Sup. Ct. Rep. 278. This case concerned the condemnation of waterworks property for municipal purchase but the opinion drew upon the Des Moines gas case which concerned rate-making.

[3] *Galveston Electric Co. v. City of Galveston.* U. S. Supreme Court, April 10, 1922. 42 Sup. Ct. Rep. 354. "The fact that a utility may reach financial success only in time or not at all is a reason for allowing a liberal return on the money invested in the enterprise; but it does not make past losses an element to be considered in deciding what the base value is and whether the rate is confiscatory."

[4] For the citation and discussion of additional cases on going value, see R. H. Whitten, *Valuation of Public Service Corporations* and *Supplement of 1914*, Ch. XXI-XXV.

[5, 6, 7] See next page.

overheads should be excluded from con- comitant of the period of busines-

commissions have made similar allowances of a flat percentage of physical value. In Missouri [8] and the District of Columbia,[9] among other jurisdictions, the commissions have stated that consideration has been given to going value in reaching the total valuation, but no specific allowance is made therefor. In Wisconsin,[10] California,[11] and Maine [12] going value has been discussed as the deficiency of return below the normal going rate on investments in established enterprises during the early years of operation, but the actual allowance has frequently been a compromise figure. In New York [13] and the Province of Manitoba [14] the computation of going value as the sum of early deficits has been specifically disallowed by the state commissions.

The uncertainty of the courts and commissions evidenced by the decisions cited is unfortunate in view of the large amounts involved and the interests, public and private, that an adequate revenue accrue to public utilities in order that investment in such properties shall be secure and attractive. Where assets estimated at from five to twenty per cent of the total valuation of public utility properties are involved it seems that a logical and uniform method of their valuation should be adopted.[15] In this article, therefore, an attempt will be made to develop a reasoned definition for going value and to present logical principles for determining its amount and practicable methods of compensating the utilities for its creation.

Definition of Going Value

Going value may be distinguished from certain other intangible assets, often confused, which should be separately valued. Going value has sometimes been held to include all intangible assets, representing the entire difference in value between the "bare bones" of a public utility plant and the same property equipped with an organization and doing business with large numbers of connected customers. To facilitate analysis of the intangible property values it seems that promotion and organization expenses and engineering

[5] H. B. Vanderblue and K. F. Burgess, *Railroads: Rates, Service, Management*, p. 347.

[6] *Re Springfield Consolidated Railway Co.* Illinois Public Utilities Commission. P. U. R. 1920 E 474.

Re Illinois Northern Utilities Co. Illinois Public Utilities Commission. P. U. R. 1920 E 908.

[7] *Re Laporte Gas & Electric Co.* Indiana Public Service Commission. P. U. R. 1921 A 824.

[8] *Springfield City Water Co. v. Springfield.* Missouri Public Service Commission. P. U. R. 1919 D 853.

[9] *Re Capital Traction Co.* Public Utility Commission of the District of Columbia. P. U. R. 1919 F 779.

[10] *Hill v. Antigo Water Co.* Wisconsin Railroad Commission. 3 W. R. C. R. 623, 711. *State Journal Printing Co. v. Madison Gas & Electric Co.* Wisconsin Railroad Commission. 4 W. R. C. R. 501, 580.

[11] *Re Redding.* California Railroad Commission. P. U. R. 1919 F 440.

[12] *Re York County Water Co.* Maine Public Utilities Commission. P. U. R. 1921 A 443.

[13] *Board of Trustees of the Village of Lyons v. Wayne County Telephone Co.* New York Public Service Commission, 2d District. P. U. R. 1921 A 385.

[14] *Re Winnipeg Electric Railway Co.* Manitoba Public Utilities Commission. P. U. R. 1920 F 895.

[15] In several specific cases the valuations of going value actually allowed have been as follows:

$300,000 where the valuation of other assets was $2,240,000. *Des Moines Gas Co. v. Des Moines, supra.*

$800,000 where the valuation of other assets was $12,000,000. *Denver v. Denver Union Water Co., supra.*

$600,000 where tangible property including overheads were considered worth $6,133,000. *Plymouth v. Wilkesbarre Ry. Co.* Pennsylvania Public Service Commission. P. U. R. 1920 F 677.

$1,500,000 where the investment in plant was $8,500,000. *Re Appalachian Power Co.* West Virginia Public Service Commission. P. U. R. 1919 D 286.

illustrated by the chart below. In no initial expense of selling the service. In

overheads should be excluded from consideration, however. Promotion and organization expenses are costs of creating the corporate organization similar in nature to the costs of creating the physical plant and have no direct relation to the cost of building up the business. These costs are incurred, moreover, before the operation is begun and represent an outlay of cash or its equivalent; on the other hand the expense of building up the business is incurred during a development period after operations are begun and involves negative outlay through the sacrifice of return as well as the expenditure of money. Engineering overheads properly attach to the physical property which is constructed according to the engineers' designs and should be included in its physical valuation, which excludes them from consideration as an intangible asset.

Going value may be defined therefore as the value created in connection with the gradual development of the business during the post-organization and post-construction period. It represents the sacrifice of return incurred by utility owners through the investment of capital in physical plant necessarily constructed in advance of its full utilization by the community, the outlay for maintenance of the surplus plant while the business is being developed, and the initial cost of selling service to customers.

The Existence of Going Value

Before the propriety of admitting going value as a property right is considered the fact of its existence as an element of value in all public utility enterprises with a developed business should be demonstrated.

Outlay for the purposes specified in the definition is an unavoidable concomitant of the period of business development. Construction must be undertaken in large units in advance of its full utilization in order to save the additional expense of piecemeal construction and to provide units of sufficient size to possess good operating economy. In making additions to electric generating plant, for example, foundations for all the turbines and generators to be eventually installed must be laid and the powerhouse structure erected simultaneously to avoid the excessive expense of reassembling the organization and equipment for a construction job. The units of generating equipment installed must also be of the largest size justified by the prospective demands of the community. Since the cost per unit of producing current is much less with 10,000 kw. generators than with 2,000 kw. generators, and since the operating efficiency of 30,000 kw. generators is markedly greater than the efficiency of the 10,000 kw. units, the public utility would fail in its obligation to supply service at the lowest possible cost if its additions to plant equipment were not made in units sufficiently large to handle its prospective load economically. In the development of a railway or street railway business much of the investment in improvements must be made in advance of their full utilization. Line extensions of transportation utilities are typically made before the development of the full volume of traffic which they can accommodate. Overloaded singletrack lines must be doubletracked to maintain the service demanded even though the amount of traffic transported does not increase to capacity until years after the investment has been increased.

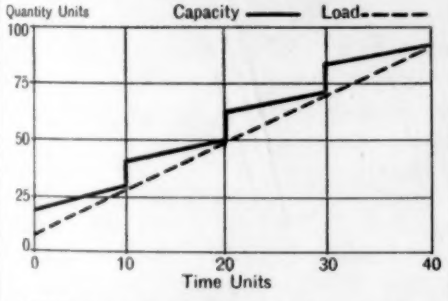
This normal relation of the increase of plant capacity involving investment of capital and the increase of load is

illustrated by the chart below. In no actual case would the indices move with such complete regularity, but the normal effect of the conditions inherent in the utility business, as described below the chart, is clearly indicated.

The accumulated costs of carrying the surplus plant necessarily constructed in advance of utilization constitute the principal part of the going value asset, according to the definition previously proposed. These costs are the interest on the idle portion of the capital invested in physical property over the period in which the business is being developed and the costs of maintaining that idle property in good condition.

The second outlay which contributes to the creation of going value is the initial expense of selling the service. In the case of power utilities the negotiation of the power contracts is a costly procedure involving a high degree of selling ability and considerable engineering research into customers' power requirements. In the case of railways the expense of encouraging agriculture and industrial development along the railway lines for the purpose of selling the service is an outlay which contributes to the creation of established business relations of a permanent character.

Normal Development of Plant Capacity and Consumers' Demands in a Growing Public Utility Business



THE abrupt rises in the Capacity curve indicate the periodic addition to plant of large units such as complete generating stations or long distance transmission lines in case of electric utilities and such improvements as extra main tracks on an entire division or complete new terminals in the case of railroads. The gradual rises in the intervening periods represent minor improvements such as the construction of local distribution lines for an electric utility or the regular addition of cars and locomotives to railroad equipment.

The Load curve reflects the relatively steady increase in demand created by the diversified requirements of separate consumers.

This initial cost of selling service and the carrying charges created by the construction of plant in advance of utilization may equitably be considered as assets to be amortized over the entire life of the utilities and not as expenses to be charged against current revenue. According to conservative accounting practice in private business these costs would be charged against current revenues, but in theory all costs should be prorated equally over the entire product to whose creation the outlay has contributed. In the case of public utilities the economical production of the service after capacity business is developed is made possible by the use of large and efficient physical units. These units are installed because it is believed that in future when they are operated at capacity the saving in the unit costs of producing the service will offset the carrying charges now incurred while the business is being developed. Consequently the current expense of operation after the capacity business has been developed does not represent the whole cost of serving the consumer during this post-development period. In addition to such current costs the consumer who profits from the efficiency of large installations after the capacity business has been developed is properly chargeable with his proportionate share

of the carrying charges assumed by the utility owners during the development period.

In theory the selling expenses of a utility or other business should be prorated equally over each unit of the product sold. Assuming that the accessions of new business are permanent the cost of securing the new business might be set up as an asset over the entire life of the utility and not charged as an expense against the first few units only of the service sold.

The Measurement of Going Value

A just method of appraising going value, whose existence as an element of value is thus established, must necessarily be determined if rates are to be regulated to provide for its amortization or allow a return upon its capitalized value.

In theory, going value should be set up as an asset by the apportionment of the interest, maintenance, and selling expenses previously cited between the operating expense accounts and a going value asset account. The going value created by the interest and maintenance outlays would then equal the total charges in connection with each plant unit less an amount charged against the revenue from existing business proportionate to the ratio between existing and capacity output. The going value created by the selling expenses incident to the upbuilding of load or traffic would be the amount of new business department expenses which went to increase the volume of business beyond those necessary merely to maintain it. Thus, if an electric company secured 10,000 kw. new business during the year and lost 5,000 kw. load, half of the selling expenses should be charged to going value and only the remaining half to operation.

The valuation of currently created going value by this method is hardly practicable, however, because of the highly technical accounting which its application requires, while such accounting records, of course, are not available for the purpose of establishing going value created during past periods.

Since such allocation of expense accounts between capital and revenue has not been attempted in the past, the best available method for historically determining the amount of existing going value is the accumulation of past deficiencies in net revenue after all current expenses have been charged against current gross earnings. That the deficiencies caused by overbuilding or losses caused by imprudent management are lumped with outlays really necessary in building up the business is the probable reason for its disallowance by the Supreme Court in the Galveston railway case.[16]

To eliminate the disadvantage of the historical method of capitalizing past losses which may have a variety of causes it is submitted that the theoretical accumulation of going value should be computed by the regulatory commissions when it is decided to make allowance in the rate base for existing going value. For each case or each type of utility the

[16] *Galveston Electric Co. v. City of Galveston.* U. S. Supreme Court, April 10, 1922. 42 Sup. Ct. Rep. 354. "A company which has failed to secure from year to year sufficient earnings to keep the investment unimpaired and to pay a fair return, whether its failure was the result of imprudence in engaging in the enterprise, or of errors in management, or of omission to exact proper prices for its output, cannot erect out of past deficits a legal base for holding confiscatory for the future rates, which would, on the basis of present reproduction value, otherwise be compensatory."

When the corporate organization is ... charging the utility customers ...

commissions should estimate the amount of outlay required to create going value as previously defined under reasonably prudent and far-sighted management. This method of valuing going value creates an incentive for exceptionally able and energetic management which would be lost if all past deficiencies in income were allowed as going value. If imprudent management has overbuilt the plant, incurred excessive selling expenses, or sustained losses through destructive competition, the utility owners are properly penalized for their mistakes under this method since the public is only burdened with the payment of a return upon the outlays during the development period which would be made by a reasonably able management. If extraordinarily good management has reduced the duration of the development period, however, it provides a bonus to the utility owners by making an allowance in the rate base for going value in excess of the actual outlay which may have been minimized by a particularly timely expansion program.

Going Value as a Property Right

Granted the existence of going value as an asset representing outlay and the possibility of determining its approximate amount by the use of reasonable judgment the methods by which compensation shall be made to the utility owners alone remain to be considered.

The compensation for the outlays involved in creating going value might be made in three ways: (1) amortization might be effected by the allowance of a higher rate of return on the physical property during the post-development period; (2) amortization of the going value as rapidly as created might be effected by the allowance of service rates sufficiently high to cover the current outlays for the creation of going value; (3) the permanent capitalization of the going value might be sanctioned and its amount included in the rate base upon which a normal rate of return is to be permitted.

The first alternative, the amortization of going value created during the development period through earnings in excess of the normal business return during the post-development period, is the normal procedure in non-regulated industry. The investor in a new manufacturing enterprise commonly expects that no dividends will be paid for several years and thereafter he looks forward to large earnings on his original investment. A similar deferment of all return and the subsequent allowance of a rate of return somewhat in excess of normal interest in recompense for early sacrifices and risks in the case of public utilities should be permitted, according to the opinion of the Supreme Court in the Galveston railway case.[17] The payment of dividends in excess of the normal business return creates public suspicion that the service rates are excessive, however, and is apt to cause damaging controversy and litigation before the commissions. Compensation for the creation of going value by subsequent amortization through earnings does not distinguish amortization from income for the stockholder and may cause him loss if the amortization of going value is afterwards held to be completed and earnings are reduced.

The second alternative, current amortization of going value by imposition of rates sufficiently high to cover the outlays incident to its creation, is just and practicable under certain conditions.

[17] *Galveston Electric Co. v. City of Galveston.* U. S. Supreme Court, April 10, 1922. 42 Sup. Ct. Rep. 354. cf. quotation above, note 3.

When the corporate organization is extensive and individual plant units are relatively small and when the expansion of the business is steady and continuous, the burden upon the consumer and the return to the utility owner are the same whether the going value costs are paid for out of current earnings or capitalized. In vast consolidated utility operations such as those of the New York Central Railroad or the American Telephone & Telegraph Company, extensive additions to some portion of the plant are made each year. The burden of carrying plant in advance of utilization and the amount of selling expenses are accordingly about the same in each period, and in practice no injustice to consumers results from failure to spread such costs over the entire life of the property. The going value costs of a single year are approximately the same as an annual return on the accumulation of going value costs over a series of past years. If the costs of creating going value as previously defined are charged against current revenues, as would be done under the more conservative and usual accounting practice, the utility is justly recompensed for its outlay while its customers of the future are not inequitably favored at the expense of its customers of the present period.

Where the customers of a utility pay its development costs currently through regular service rates sufficient to cover such outlay as rapidly as it is made, going value should not be included in the rate base upon which the company should have a right to earn a return. Under these circumstances such inclusion is inequitable, since it results in double-charging the utility customers for the outlay made by the utility owners. Having collected revenue sufficient currently to amortize the cost of creating going value, the utilities cannot properly claim the right to earn a return upon going value as an asset since it is an asset for which they have made no sacrifice or capital outlay.[18] As previously demonstrated, going value is an element of value which attaches to every developed utility business, and its existence is not terminated by amortizing its cost currently when the circumstances of the utility make it desirable to do so. When amortization is effected by rates charged the public sufficiently high to cover its cost, this element of value ceases to be property upon the value of which the utility owners have the right to earn a return, however, and its valuation has no practical significance.

Where the property of a utility corporation consists of a single operating unit necessarily constructed at one time, such as the water-power development of the Mississippi River Power Company at Keokuk, Iowa, it seems that capitalization in the rate base of the going value costs incurred during the early years of operation should be permitted. Their current absorption through rates on the small initial load is obviously impracticable, since the rates would have to be set at a prohibitive level to cover these costs. Assuming that their subsequent amortization through the grant of an extraordinarily high rate of return is impolitic, the costs to the company of creating going value must be capitalized in the present

[18] The regulatory commissions have consistently supported this view. See *Davis v. Pennsylvania Gas Co.* New York Public Utility Commission, 2d District. P. U. R. 1921 B 342.

East Chicago v. East Chicago & Indiana Harbor Water Co. Indiana Public Service Commission. P. U. R. 1922 A 206.

Re Wood River Power Co. Idaho Public Utilities Commission. P. U. R. 1921 B 531.

rate base if its owners are ever to be compensated for their outlay.

Conclusion

Going value is created by the outlay of cash or the sacrifice of return in the process of developing the business of every public utility. Its amount may be measured approximately by an analysis of the costs necessarily incurred under good management in the process of developing the business. Compensation for this outlay must in justice be given to the owners of the utility either through current amortization of the going value asset, through deferred amortization, or through capitalization. The choice of method will depend upon the nature of the particular utility business and considerations of public policy.

CASE STUDIES IN BUSINESS

1. TINKHAM, LITTELL, INC.

An Analysis of the Organization of a Sales Force

TINKHAM, LITTELL, INC., decided in 1918 to consolidate the sales forces and sales branches of its seven lines in order to eliminate duplication of sales effort. The firm originally manufactured one line and later purchased plants making six other unrelated lines of products. The following table lists the products, sales outlets, and number of sales branches maintained for each product up to 1918:

Products [1]	Customers	Number of Sales Branches
"A"	Coal, iron and copper mines, stone quarries, public improvements, railroads, etc.	12
"B"	60% automobile manufacturers, 40% toilet goods and specialty manufacturers	5
"C"	Automobile and furniture manufacturers	3
"D"	Wholesalers	4
"E"	Large manufacturers	2
"F"	Cotton mills	2
"G"	Paint manufacturers	4
	Total number of branches	32

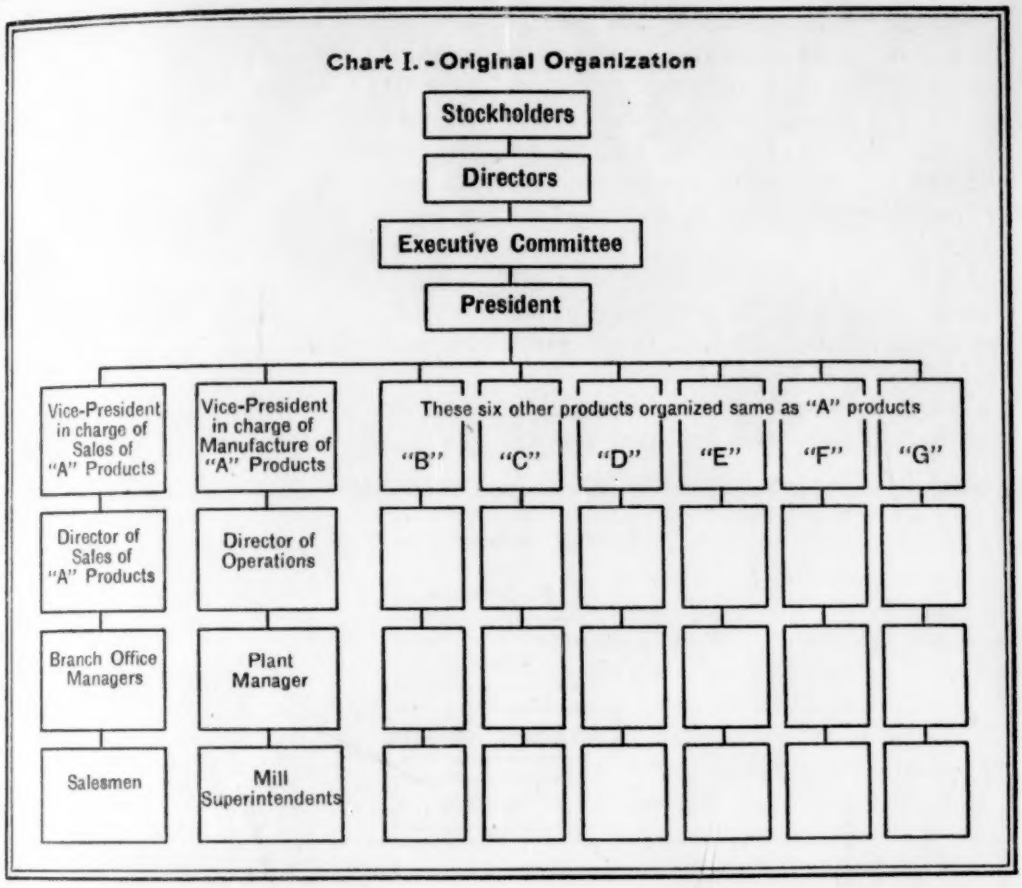
Original Organization

For several years the company had been dissatisfied with what appeared to be costly duplication of sales effort. In Chicago, for example, there were five separate offices, each with a sales force for a single product of Tinkham, Littell, Inc. The original organization is indicated in Chart I; only the organization for "A" product is shown. The organization is similar for each of the other six classes of products.

Each of the seven lines of products was sold by a separate sales organization with a Vice-President in charge. Control of production was separated from control of sales for each line of products. A Director of Sales at the home office controlled the branches. Each branch manager was an expert in the product sold by his branch and salesmen were specialists in the one line. If a customer purchased more than one line of products, it was necessary to have separate salesmen from separate branches call upon him. Since salesmen could not deal with buyers of other lines of products than their own, separate representatives of the company had to be sent to each industrial community to sell each line of products. In a small industrial center there might be only one user of a line of products; nevertheless, if the company wished to compete for the business, it had to bear the expense of sending its salesman of that line to the prospective customer.

Executives of the company desired to save expense by eliminating visits by separate salesmen to individual buyers who purchased more than one line and by consolidating under one salesman the work of selling the various products among average and small sized users.

[1] The specific names of the products have been omitted to prevent the disclosure of the identity of the company.



The Jamestown Plan

It was decided to experiment in the Jamestown district. Jamestown was chosen because it was a district with an average volume of sales and a good diversification of industries. The branches for the several products there were consolidated into one branch office under one General Sales Manager and the work of selling the various products among average and small sized customers was combined in individual salesmen who now sold all seven lines of products. Specialists were still retained to sell to the larger users of each line of products.

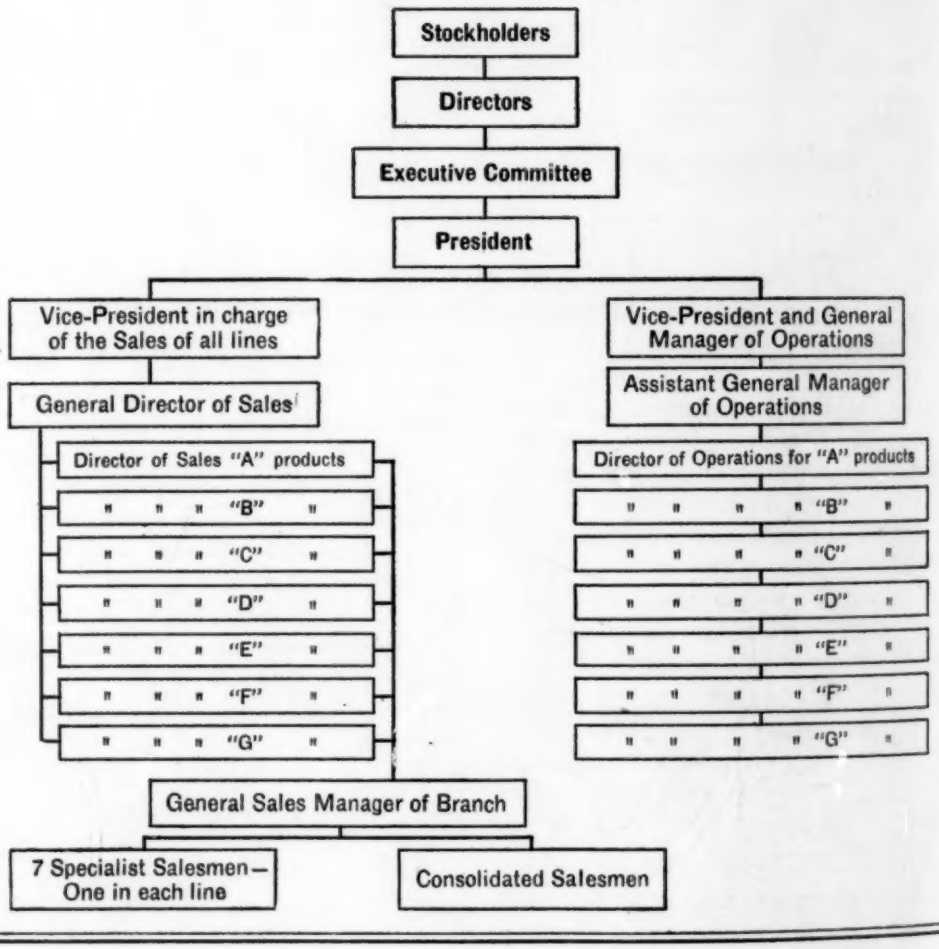
The experiment was a success. It resulted in an increase in the total volume of sales and the development of new accounts. It was found that some industrial concerns, which before the experiment were buyers of only one product from the company, were now purchasers of more than one line. The reason for this usually was that the volume of purchases in the extra lines was so small that it had not been advisable for salesmen in these lines to solicit such business under the original organization. Salesmen, furthermore, were enabled to solicit customers whose annual purchases in a single line were not large enough to warrant a call under the original plan, but whose combined purchases under the new plan made up a volume sufficient to justify a salesman's attention.

Because of its success in the Jamestown district the principle of the plan was adopted as a national policy in 1918. The branch office and field plans of each district, however, had to be adapted to territorial conditions, but in general this plan is indicated in Chart II.

Under the Jamestown plan there was a centralization of the marketing of all the seven lines of products in the General Director of Sales. Under the original organization the seven different Directors of Sales—one for each line of products—reported to the Vice-President who was in charge of that line of products. Under the Jamestown plan the number of Directors of Sales at the central office was not changed, but all seven Directors of Sales were responsible to the General Director of Sales instead of each Director of Sales being responsible to his respective Vice-President in Charge of Sales of the particular line.

The plan provided for the centralization in the district of all sales supervision and control for all seven lines of

Chart II.—Jamestown Plan


Stockholders
Directors
Executive Committee
President
Vice-President in charge of the Sales of all lines
General Director of Sales
Director of Sales "A" products
" " " "B" "
" " " "C" "
" " " "D" "
" " " "E" "
" " " "F" "
" " " "G" "
Vice-President and General Manager of Operations
Assistant General Manager of Operations
Director of Operations for "A" products
" " " "B" "
" " " "C" "
" " " "D" "
" " " "E" "
" " " "F" "
" " " "G" "
General Sales Manager of Branch
7 Specialist Salesmen—One in each line
Consolidated Salesmen

products in one branch office. The immediate result was the reduction in number of branch offices from 32 to 13.

Under the Jamestown plan the consolidated salesmen, who sold all seven lines of products, were expected to eliminate duplication of sales effort. These salesmen called on customers whose total purchases in any line, including purchases from competitors of Tinkham, Littell, Inc., were large enough to justify either one or two calls a year. Special salesmen were retained under the branches to sell single lines to customers whose total volume of purchases in a line from all sources was large enough to justify either four or six calls a year.

Disadvantages of the Jamestown Plan

Although the experiment in the single district indicated that the plan had advantages, it did not succeed as a national sales policy. Soon after the adoption of the Jamestown plan, reports came from three of the larger branches that, since each of the different products required in its selling technical knowledge of its character and uses, one salesman could not successfully sell the seven specialized lines of products. For example, in selling lacquers to a radiator manufacturer, the salesman had to know the action of the product when subjected to varying degrees of heat in the manufacturing processes. Unless the purchases of the customer were large enough to place him under the special salesmen, he could not receive highly skilled technical advice until the consolidated salesman got into difficulty and sent for the special salesman. It was evident, furthermore, that different types of salesmen were needed to sell to different types of buyers. The best man to sell to buyers of "A" products was not likely to be the best man to sell to buyers of the other lines. It was found also that consolidated salesmen frequently had favorite lines of products which they pushed to the neglect of other lines of products. This showed, incidentally, the line of products for which the salesman was best adapted and proved that some salesmen had been in the wrong line under the original plan.

Another weakness of the Jamestown plan was the centralization of sales authority in a General Director of Sales, with a division of this authority to seven subordinate executives called Directors of Sales; the authority was then delegated to and centralized in the manager of the branch. The manager of the branch was responsible for the sales of the specialists who sold only their respective lines, and of the consolidated salesmen who sold all seven lines of products. The problems of supervision of the consolidated salesmen by the branch manager and their difficulties in selling were increased by the fact that, in general, each line of products is used in a separate industry. The attempt to control the sale of seven unrelated products, through one branch manager who received his authority from seven directors of sales, appears to have resulted in confusion in some of the branches. Under this plan the company was unable to attach responsibility to the individual salesman for changes in the volume of sales; under the original plan, however, these responsibilities could be fixed definitely as there was a complete separation of sales effort by product.

A further objection to the Jamestown plan was double solicitation of some customers on the part of the consolidated salesmen and the specialists. A consolidated salesman, for example, calling upon a prospect whose require-

ments in a particular line had not previously been developed, might sell him a volume large enough to place him in the class of customers reserved for the special salesmen. It also developed that concerns in some cases were buyers of more than one line of the company's products and were in different classes for the different lines. Under exceptional circumstances, however, when the requirements were in excess of the physical ability of the specialists, the Branch Sales Manager might permit the consolidated salesmen to help out in making these calls within the limited time for making the four or six calls per year.

In order to carry out the Jamestown program of intensive selling for securing small orders, it was necessary to increase the sales force rather than to reduce it as had been anticipated. It was found that there was no economy even in floor space used for branch offices. In the three largest branches new officials had to be appointed for administrative purposes, and the duplication of sales supervision increased selling costs. Despite the elimination of nineteen branches, the percentage of selling costs to net sales rose and the percentage of net profit decreased, but the amount of total profit in dollars and cents increased during the operation of the Jamestown plan because of an increase in volume of business.

Objection to the Discontinuance of the Jamestown Plan

These difficulties with the administration of the Jamestown plan of organization led several of the executives of Tinkham, Littell, Inc., to believe that it should be discarded and the original sales organization restored. Company opinion was divided. The old organization had been unsatisfactory because of the costly duplication of sales effort. Yet responsibility could be placed definitely under a system organized according to product; each salesman was responsible for the sale of his line in his territory; straight lines of authority ran directly from the president to the salesmen. It was realized, however, that the abandonment of the Jamestown plan might have a bad effect on the morale of the sales organization. If the company went back to the old plan, it would be necessary in the three largest branches to demote the officials who had been appointed for administrative work in connection with the respective lines of products, unless they could be made branch managers for individual lines of products. Further objection to its discontinuance came from those districts in which a large volume of business from small orders had been developed. In those fields the company had not been able to develop small order business under the old plan, but the Jamestown plan had been successful in reaching small buyers. It enabled the company to call upon small customers whose annual purchases of one line were not large enough to warrant a salesman's visit under the original plan and to develop new accounts with customers whose purchases in some lines were too small to warrant calls by salesmen of those lines.

Although the ratio of selling costs to sales had risen, it was pointed out by the proponents of the Jamestown plan that it had been used during a period of extraordinary fluctuations in business conditions; and that, as business showed further improvement, the percentage of selling costs might be expected to decline because the organization would not have to be expanded proportionately to handle the increase in volume of sales. As they stated, the

Jamestown plan was instituted at a time when all costs had risen to abnormal heights and were still rising. In 1921, when its discontinuance was suggested, the volume of sales was low and the costs of labor and supervision were relatively high. In addition to this, the system had been costly to install, buyers had become familiar with it, and it was feared that another change would suggest to the trade that the company's organization had become unwieldy.

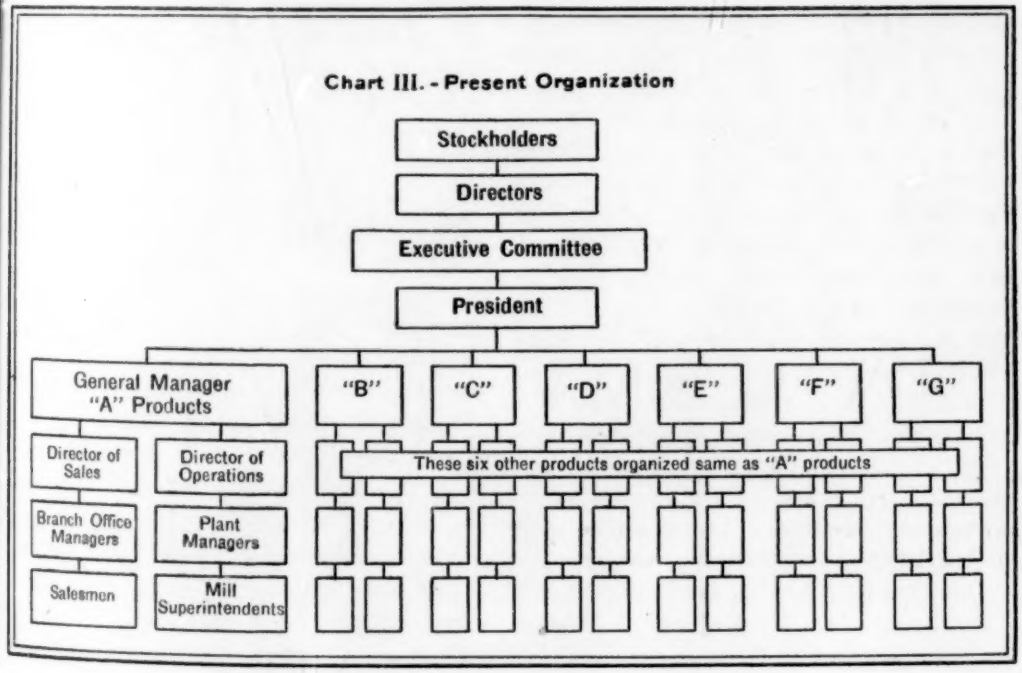
The Present Organization

In October, 1921, however, the company went back to a modification of the original organization as shown by Chart III.

The present plan is an improvement over both its predecessors in that it concentrates control of manufacture and sale of each line in one individual. It goes back to the original plan in that it decentralizes the sales control of all lines and operates the branches and field forces for each line separately, thus doing away with the consolidated offices and consolidated salesmen. It made necessary the reopening of a number of branches which had been closed after the introduction of the Jamestown plan. Each salesman now sells only one product in a specified territory for which he is responsible. There has been a restoration of the direct line of responsibility in the sale of each product. Under the Jamestown plan there was centralization in one man of supervision of sales of all seven products in a territory; whereas, under the present plan, as far as the different localities are concerned, there is decentralization of this duty among several branch managers who report back to the Director of Sales for the single line of products sold by the branch.

There is still a difference of opinion among the officials of the company as to the relative advantages of the pres-

Chart III. - Present Organization



ent and the Jamestown plans of organization. Some of the executives still believe that some modification of the Jamestown plan would give the advantages of the elimination of duplicate sales effort without the disadvantages which caused the change to the present plan and they believe that eventually some modification of the Jamestown plan must be adopted.

The president of the company, in commenting on the Jamestown plan, stated that the extraordinary fluctuations in business during the period in which the plan was in effect would probably render any conclusions drawn from the data erroneous and that it should not be assumed by other business concerns manufacturing a diversified line that the return of the company to a decentralized sales plan is proof that consolidated sales effort is not perfectly feasible.[2]

Conclusion

From the consideration of the problem of Tinkham, Littell, Inc., the conclusion is drawn that products which are to a degree unrelated and which require technical knowledge in selling and are purchased by different classes of customers can ordinarily be sold most successfully through a sales force which is organized according to lines of product. The present plan of organization as shown in Chart III is better than the Jamestown plan because the sales effort is exerted according to lines of products. Since the separate products are used in different industries, this really means that in this company the sales effort is organized according to industries, to a considerable extent. If the products of the company, although varied, were all sold to the same customers, the problem of specialty salesmen—seven separate men calling on one customer in that case—would be quite different from the present case where as a general rule only one man calls on a customer under either plan. In spite of the comments made by the executives of the company and the caution of the president that the period under investigation was not one of normal business conditions, the principle remains that unrelated lines which require technical knowledge in selling and are sold to different industries should be sold through a sales force which is organized according to product or industry; provided this does not result in excessive loss of time by salesmen who are working in small communities.

As a corollary to the above, the deduction is made that production and sales of each separate product should be coordinated in one individual to provide for the best adjustment between production and market requirements. Previously, responsibility for these two phases of the business was placed in two different men between whom there may not always have been the fullest cooperation. The points of view of the sales manager and of the production manager often do not coincide on problems which affect both. Production and sales should be coordinated throughout the organization on the basis of product. The General Manager for each line now brings about complete cooperation between the sales force and the factory, thus carrying out this principle.

[2] The president mentioned two large distributing manufacturers who are said to be successful examples of concerns selling diversified lines through one set of salesmen.

2. THE LANSDOWNE COMPANY

A Case Dealing with the Decreasing of Seasonal Variation in Production

THE Lansdowne Company, which manufactures 8,000 varieties of small tools and utensils, faces the problem of leveling its production peaks. The demand for its products is heaviest in the late spring and fall. In the winter and summer months, the factory production drops almost 50 per cent, and one-third of the labor is laid off. The plant is in a large city where the men can drift into other industries, and 95 per cent of those who are laid off do not return. The constant overhead charges are also a source of loss during the period when production is small. These losses can be eliminated if a means is found of increasing production from January to March and from June to August.

Three methods of solving the seasonal problem have been considered by the Lansdowne Company. The simplest in theory is to influence retailers to buy in the off-season. This method has been tried successfully by manufacturers of other types of products, but, because competition is exceptionally keen in this field, retailers feel themselves under no compulsion to buy Lansdowne products except during periods of active consumer demand. Two years ago an extensive sales campaign was carried on for the purpose of leveling the sales peaks. The result was an increase of 10 per cent during the dull season, but, because of the general publicity of the campaign, there was also an increase of 25 per cent during the busy months. Total sales were increased, but the seasonal problem was made worse.

The second possible method is to manufacture for stock during the off-season. Past experience with this method has shown that carrying charges are heavy and that there is uncertainty in predicting demand requirements several months in advance. The saturation of the market, however, is more important since it makes impossible, without excessive sales cost, the disposal of the volume of products which the plant can produce if operated at capacity throughout the year. An average production rate of 65 or 70 per cent of capacity now satisfies an annual demand which was expanded by the recent sales campaign to the maximum that can be expected at present. Even if the seasonal peaks were eliminated by this method, the permanent under-capacity production of the factory would remain a serious problem.

The third possible method is to acquire other lines with other seasonal peaks. By this method the plant can be operated more nearly at the same rate throughout all seasons, and its efficiency can be raised by the accompanying increase in the total volume of production. A few years ago this plan was tried by contracting for special orders, mostly deep drawn work, for other manufacturers. In 1920 these orders stopped entirely and, when other business revived in the spring of 1922, the special work failed to reappear. The advantage of the greater control over its own branded products as compared with that over the special orders was then evident to the Lansdowne Company.

The adoption of one or more new lines whose marketing could be controlled would be the best solution if those lines were well chosen. In considering new products the importance of coordinating the sales, production, and financial policies of the business should be recognized. The Lansdowne Company has been offered the right to manufacture and sell a new type of automobile spotlight. Since the seasonal element is only one of several important considerations, it is suggested that the value of the spotlight or of any other proposed products be analyzed by means of the following questions which should serve to bring out the salient points of market possibilities and of production requirements:

MARKETING.

1. Are the unique selling points sufficiently attractive to create a demand?
2. During what months will the demand be heaviest?
3. Can the new product compete with similar ones now on the market?
4. Can it be sold by the same selling methods that are already developed?
5. Can sales be made by the same salesmen? to the same customers?
6. What is a reasonable estimate concerning the probable sales and the permanence of the market?
7. Is the new product fully protected by patents?

PRODUCTION.

1. Are the present machines adapted to the new product? What new tools and machines and how many are needed?
2. What is the probable factory cost?
3. Will the seasonal peaks of this product help to fill in the present depressions in the volume of production?
4. Is the space required for the new product available without additional construction?
5. Are there new difficulties in production such as the need for larger inventories or greater skill than the present products require?
6. How long will it take to do the preliminary work necessary before starting production?

FINANCE.

1. How much new capital is required?
2. Will outside borrowing be necessary?
3. Will the probable profits be a fair return on the investment?

Marketing Features of the Spotlight

The control device would be the important selling point of the spotlight since in other ways it is not unique. It is operated by means of a handle at the end of a flexible cable. When the handle is turned, the light moves horizontally; when it is pushed or pulled, the light is tilted vertically. This means of control would be an obvious convenience, especially in the case of closed cars or of cars with curtains.

The heaviest sales of automobile accessories are made at the times when new cars are purchased. Since the demand for all automobiles is greatest in the early spring, and for closed cars in the early fall, the sales peaks of the spotlight would come at those times. The seasonal situation of the Lansdowne Company could be improved by manufacturing the spotlight from January to March for the spring trade, and from June to August for the autumn trade.

An estimate of production costs shows that the light could be sold profitably for $5 to retailers who would resell at $7.50. At this price it could compete favorably with other high-grade lights.

A part of the present output of the Lansdowne Company consists of small tools for automobiles. These are sold to retail accessory dealers and to manufacturers who supply their new cars with tool kits. The potential buyers of the spotlight are already purchasers of some of the other products. It

could be marketed, therefore, without the expense of hiring new salesmen or of finding new customers. A catalog is now used for advertising purposes. The spotlight could be featured in the catalog and special circulars might be effective in introducing it to the accessory dealers.

The marketing problem hinges on the sales estimate. It would be little more than a guess, however, to base the estimate on a certain percentage of the total number of car owners in the country. The relative importance of closed cars, however, for which the light is best adapted, is shown by the fact that they comprised about 800,000 of the 2,287,000[1] cars produced in 1922. When the spotlight was first considered, the Lansdowne Company's salesmen were instructed to estimate the number that the customers in their territories would buy. After reducing these estimates to conservative figures, it appears that sales of 10,000 could reasonably be expected during the first year. Larger orders might be secured from automobile manufacturers for use as standard equipment; but since these orders are uncertain, a minimum sales estimate should exclude them.

The Lansdowne Company could expect a permanent market unless the light is later surpassed by that of some other manufacturer. Spotlights are not the type of fad which is popular one year and which disappears entirely the next. The right to manufacture the light would be permanent during the life of the patent, since the inventor offers this concession in return for a reasonable royalty.

Production Aspects of the Spotlight

The production of the light would involve deep drawn work, screw machine work, nickel plating, and assembly, wiring and soldering. There is an ample supply of presses for the deep drawn work and a well-equipped plating department. The screw machine department, however, consists of antiquated equipment which practically has been scrapped. The factory, moreover, has no equipment for assembly and lacks experience in wiring and delicate soldering.

An estimate of the costs of production was made, and it was found that the cheapest method of manufacture would be to do only the deep drawn work, plating, and assembly at the plant and to have the screw machine work done under contract by another factory. On the basis of 10,000 lights per year, the factory cost, including the inventor's royalty, was estimated at $3, and the necessary investment in tools and equipment at $30,000. This plan would result not only in the lowest production costs but also in the lowest investment in tools and equipment. The latter would be particularly desirable in view of the new and untried character of the product. The drawing press and plating departments which present the greatest problems of seasonal valleys, moreover, would be utilized. Although the production of the light would not keep all the equipment in these departments busy, it would reduce idle time charges by utilizing some machines which otherwise would be shut down. All the screw machines are obsolete, and it would be found practicable to remove them and to use this space for the assembly department.

The problem of securing adequate and experienced help for the assembly work could be solved by hiring a foreman who was familiar with the processes involved and by subdividing the work so that girls could be readily

[1] National Automobile Chamber of Commerce.

trained to do the individual operations. The production department is familiar with the other work and could utilize men who otherwise would be laid off.

The question of inventory is not of great importance. There is always on hand sheet metal which is suitable for the shell of the lamp, and the remainder of the parts, including glass, sockets, goosenecks, and wire, could be ordered in the quantities desired for production. With two manufacturing seasons, the company could expect to turn its inventory twice a year. The maximum amount tied up in raw material, work in process, and finished goods normally would not exceed $15,000. The time necessary to redesign the light for economical production, to secure the necessary dies and tools, and to complete the first lot of 5,000 should be approximately one year.

Capital Requirements and Expected Profits

The maximum cash requirements for the first year of production would be about $60,000, consisting of $15,000 for inventory, $30,000 for new tools, $10,000 for advertising, and $5,000 for other working capital. The financial position of the business is sufficiently strong to make outside borrowing unnecessary. The gross profit on 10,000 lights based on a factory cost of $3 and a selling price of $5 would be $20,000. Of this amount 20 per cent of the factory cost, or $6,000, should be deducted for selling and commercial expense, and $10,000 for initial advertising. The net profit of $4,000 which would be realized the first year would amount to only a 6.7% return on the capital invested. The manufacture of this article in the dull season, however, would decrease the overhead and manufacturing expenses of the other products. In addition, the direct return on the spotlight enterprise would increase in succeeding years, since it would not be necessary to spend such a large proportion of the gross profit for advertising.

Since the sales, production, and financial requirements of the spotlight could be coordinated efficiently with its present business policies, the Lansdowne Company should proceed with the steps preliminary to its manufacturing.

4. THE HAMMETT MANUFACTURING COMPANY

A Discussion of Methods of Relating Advertising to the Business Cycle

THE Hammett Manufacturing Company, which is located on the outskirts of a large eastern city, manufactures an extensive line of paper products, including labels, jewelry boxes, tags, tissue paper, and paper articles for the holiday trade. For the purpose of control these products are classified into two main divisions—(1) The ultimate consumer line, consisting of merchandise sold to retailers for resale; (2) The industrial line, consisting of merchandise sold to large consumers for their own use.

In the past the company has been faced with numerous production and distribution problems because of fluctuations in its volume of manufacture. To overcome these difficulties it has added lines from time to time, and it has established a committee to develop new merchandise for release in periods of depression. This latter plan has met with considerable success. In the case

of tags, for example, it has been found that customers who would not buy ordinary tags were willing to buy tags with new and attractive designs. The company also has related its building program, purchasing and sales plans to the business cycle. In periods of prosperity building activity is curtailed, for costs of labor and material are high; purchases are made on a hand-to-mouth basis, although proper allowance is made for the production needs; and new salesmen are hired and trained. In periods of depression, on the other hand, building activity is carried on where advisable, for costs of labor and material are comparatively low; purchases are made with less conservatism; and the salesmen who have been trained in the time of prosperity are sent out to obtain business.

For many years the Hammett Manufacturing Company has been a small user of advertising space. In 1919, however, it felt that competition and the trend toward increased publicity justified the employment of advertising on a larger scale, and this in turn necessitated the adoption of definite advertising policies. In this connection, the question arose as to when and in what amounts the advertising appropriation should be utilized. There appeared to be three alternatives: first, to advertise continuously and, allowance being made for normal growth, to spend an equal amount each year; second, to advertise heavily in periods of prosperity and lightly in times of depression; and third, to advertise heavily in times of depression and lightly in times of prosperity.

The chief advantage of the first proposal is the cumulative effect which would be gained from steady repetition. In a period of depression, however, the volume of advertising would probably be of little assistance in effecting the introduction of new lines and in stimulating the morale of the newly added salesmen. Again, in a period of prosperity when the company has all the orders it can take care of, the volume of advertising would be in excess of what was needed.

The second alternative aims to make a strong appeal when the consumer is in a prosperous condition and sales resistance is low. This practice, which is made easier by the readiness of funds during prosperity, is followed by many manufacturers. Its weakness lies in the fact that it is most effective in securing orders when the company needs them the least, and it is least effective in securing orders when the company needs them the most.

The third alternative seems to combine a minimum of disadvantages with a maximum of advantages. From the standpoint of cumulative effect, it would probably not have the force of the first alternative. On the other hand, it would tend to assist in securing orders when the company was most in need of them, and at the same time it would increase the prestige of the company over non-advertising competitors. Further, the third alternative would coincide with the company's cyclical policies. Increased advertising would be essential to the introduction of new lines in times of depression and it would be effective also in stimulating the morale of the salesmen.

Largely for these reasons the Hammett Manufacturing Company favored the third alternative. It adopted a plan requiring that advertising appropriations should be formed in accordance with a five-year outlook and that annual amounts based on average conditions should be set aside. In good times the advertising was to be exceed-

ingly moderate, just enough to retain the momentum and to keep the Hammett name and merchandise before the public. In periods of depression, however, all forms of publicity were to be employed to the fullest degree, and the advertising appropriations which were not used during the time of prosperity were to be utilized.

In accordance with this decision, the Hammett Manufacturing Company advertised lightly in the prosperity years of 1919 and 1920; but in 1921 it increased the advertising appropriation to 3% of sales. In 1922 business conditions were slightly improved with the result that the advertising appropriation was decreased to about 2% of sales. Since the company expects that business conditions in 1923 will be better than those of 1922, it is now reducing the advertising appropriation to 1.5% of sales.

The effectiveness of this advertising policy cannot be judged finally until it has stood the test of several business cycles. Thus far, however, the results have been satisfactory. In 1919 and 1920 sales were maintained with a minimum expenditure for advertising, and during 1921 and 1922 the sales did not decline in the proportion common to other concerns. Further than this, the morale of the sales force was greatly stimulated by the advertising, and it is believed that this factor also assisted the company to maintain a high rate of production and to retain practically all its factory personnel. Finally, indications are that the cost per advertising return in the time of depression was not greater than the cost per return in the period of prosperity.

This experience of the Hammett Manufacturing Company suggests that manufacturers who have difficulty in filling the numerous orders arising in a time of prosperity might do well to conserve their advertising appropriation for a time when business is in greater need. Also, it indicates the part which advertising may come to play in the attempt to level the peaks and valleys created by periods of depression and prosperity in business.

REVIEWS OF BUSINESS LITERATURE

Jones, Franklin D. TRADE ASSOCIATION ACTIVITIES AND THE LAW. A discussion of the legal and economic aspects of collective action through trade associations. *New York: McGraw-Hill, 1922. 360 pp....$3*

ALTHOUGH an incomplete survey by the Department of Commerce a few years ago showed the existence of over 1,000 trade associations in this country, a surprising lack of appreciation of the importance of the movement is evident. The absence of clearness of concept of their proper activities and the general haze surrounding the subject are forcibly illustrated in the recent correspondence between Secretary Hoover of the Department of Commerce and Attorney General Daugherty.

Since little of a critical nature has been written in this important field, the present treatise is accordingly the more welcome. Mr. Jones, as a member of the Bar of the United States Supreme Court, is in a position to give impartial observation and scientific analysis to the problem. In this distinct contribution to the literature of the subject the author presents and analyzes both the economic and the legal aspects of trade association activities.

The book contains brief explanations of the laws governing competition and their purposes. It explains, furthermore, the usual trade association activities with a clear and interesting discussion of the economic benefits of these functions to the trade and to society as a whole. In most cases the point is shown at which these activities may enter the "twilight zone" of doubtful legality. The codification of fair practices; the compilation and broadcasting of basic facts; the use of uniform accounting systems; the gathering of cost data; the need of a standardization program; the value of research; constructive suggestions on labor relations; methods and benefits of cooperative advertising; various protective activities, such as credit, insurance, patent, trade-mark, and design bureaus; the development of commercial arbitration; and the field of foreign trade are discussed in these chapters. In the closing chapters Mr. Jones shows the need of closer relationship between governmental agencies and trade associations and summarizes the collective activities prohibited by law. A complete appendix gives the text of the laws affecting trade associations and the correspondence between the Department of Commerce and the Department of Justice upon association activities.

The discussion is substantiated by citations from legal cases, contemporary literature, and actual practice. Although written primarily for association officials and members, Mr. Jones' contribution to business literature contains material of interest to any business man. It may be used as a guide in the formulation of association policies, and, through the citations, as a reference for a more exhaustive study of detailed points.

Fisher, Irving. THE MAKING OF INDEX NUMBERS. *Boston: Houghton, Mifflin, 1922. 526 pp.....$7.50*

WITH the extended use of index numbers, this book comes to fill a distinct need in a field of growing importance. Published under the auspices of the Pollak Foundation, and written by Professor Irving Fisher of Yale, an internationally known authority, it

is the most complete treatise yet contributed upon the subject. The book, since it is both theoretical and practical, is designed to meet the needs of the specialist, the student, the business man, and the general reader. The material is arranged so as to preserve its clarity for the uninitiated and also to maintain its value as an authoritative study.

All the various types of averages and systems of weighting are described in detail. The author discriminates among them by means of certain tests —the Time Reversal and the Factor Reversal—and demonstrates that many are inherently biased, erratic, or freakish. He indicates how these errors may be rectified. The effect of the base used is also shown. Finally, he compares the various formulae according to their accuracy and speed of computation. Eight formulae, among them Fisher's Ideal or Best Formula, are determined upon as the most practical.

Professor Fisher shows that many of the methods of computing published index numbers now in vogue are grossly inaccurate. For the business man who has occasion to use index numbers, this book will explain in understandable language why some formulae are precise and some inaccurate. It will enable him to discriminate between good, bad, and indifferent index numbers. For the student and maker of index numbers, here is the most comprehensive work available, and for the specialist, much that is distinctly new.

Brissenden and Frankel. LABOR TURNOVER IN INDUSTRY. *New York: Macmillan, 1922. 215 pp.....$3.50*

THE nature, causes, and extent of labor instability and the various factors that affect it are considered in this book. The authors suggest employment methods and records that may be used as a means to reduce this instability. The problem is presented interestingly from the viewpoint of the business establishment rather than from that of the community or individual. The nature of the industry, its geographical location, the skill of the workers, the types of separation, the seasonal influences, and the length of service are considered as causes of labor turnover.

A new means for computing labor turnover, involving a combination of other and previous devices, is presented. The exact method is given as follows: "The general extent of labor mobility is statistically determined by comparing the total movement of labor in and out (accessions and separations) during any given period with the number of 'fully-employed-worker' labor-time units of 3,000 hours put in by the work force during that period. The number of labor changes, in short, is compared with the number of full-year workers."

In its extended use of actual statistics, the book goes further than any previous study. The discussion is based upon actual data obtained by the authors in connection with their work on the staff of the United States Bureau of Labor Statistics. About 500,000 laborers are included in this investigation, and labor and employment figures for various types of industry between the years 1910-1919 are used. Further statistical material for specific industries is found in an elaborate appendix. The subject-matter is thus a timely and authoritative survey of actual conditions and practices regarding labor turnover and is a needed addition to the literature of this widely discussed field.

Not only should this study prove of interest to the student of economics, but for those vitally concerned in industrial management the book should be a guide in determining whether or not their labor instability is excessive.

BOOK NOTICES

Boggs, Theodore H. THE INTERNATIONAL TRADE BALANCE IN THEORY AND PRACTICE. *New York: Macmillan, 1922.* 221 pp. $2.

An attempt is made in this volume to set forth in considerable detail the principles underlying the theory of the balance of trade. The author has sought as well to show the practical application of these principles, as revealed in the trade balances of the United States, Great Britain, Canada, India, Australia, New Zealand, and South Africa. In the discussion considerable attention is devoted to the closely related question of foreign exchange.

Brewster, Stanley F. LEGAL ASPECTS OF CREDIT. *New York: Ronald Press, 1923.* viii, 549 pp. $5.

Though designed primarily for the credit executive and aiming to equip him with the legal knowledge needed to minimize losses on credit extensions, the author endeavors to give a simple but fairly thorough exposition of the fundamental principles of credit granting. Among others are chapters dealing with types of business organizations and their legal liabilities, the legal nature of sales, the safeguarding of payment in the sale of goods, and legal rights and remedies of mercantile creditors.

Carroll, Mollie Ray. LABOR AND POLITICS. *Boston: Houghton, Mifflin, 1923.* 206 pp. $2.

This volume, one of Hart, Schaffner and Marx's Prize Essays on Economics, analyzes the attitude of the American Federation of Labor toward law, legislation and politics. The analysis is based primarily upon official or officially approved utterances. Final chapters of the book discuss the future limitations of the Federation's program as judged by its own standards. The author is chairman of the social science department of Goucher College.

Cunningham, William J. AMERICAN RAILROADS: GOVERNMENT CONTROL AND RECONSTRUCTION POLICIES. *Chicago: A. W. Shaw Co., 1922.* 409 pp. $3.

Professor Cunningham approaches his subject with a brief summary of American railroad history to 1916 and a chapter on the voluntary unification by the formation of the Railroads' War Board. The main emphasis is laid on the several phases of federal control, Chapters II to XXI being devoted to a recital of the organization, methods, and results under government operation. The Transportation Act of 1920 is then discussed. In the remaining chapters the author analyzes the outstanding events of 1920 and 1921 and the situation existing in July, 1922.

A full appendix gives the President's Proclamation, the Federal Control Act, the Standard Contract, and a discussion by the author of the accomplishments of the United States Railroad Administration in unifying and standardizing the statistics of operation.

Farquhar, Henry H. FACTORY STORESKEEPING. *New York: McGraw-Hill, 1922.* 182 pp. $2.50.

The purpose of the author is "to outline the principles and methods by which the handling of materials may be standardized and cheapened through scientific regulation." This object is accomplished by detailed discussions of functions, forms and rules which have been put into successful operation in factories. The author first shows the need of close coordination between the production and supply departments and then states what information is needed to secure control. The functions and personnel of the several departments involved are analyzed. Detailed rules are given for the operation and physical layout of the storeroom. The classification of materials and the use of mnemonic symbols are discussed in detail. The closing chapter deals with accounting and statistics of materials. The discussion is amplified by actual forms used, and illustrations and diagrams show the proper methods of carrying out the program which is recommended.

Ivey, Paul Wesley. ELEMENTS OF RETAIL SALESMANSHIP. New edition. *New York: Macmillan, 1923.* 275 pp. $1.75.

The author first builds up a background by a brief discussion of the industrial revolution and the development of retailing; then dis-

cusses the value of a thorough knowledge of the goods, methods and importance of ability to judge the customer; ways of approach, the qualities which make up personality, and their development, the steps in the actual selling process, ways of appealing to the imagination, and the value of suggestion; and concludes with a detailed discussion of store system and method, showing the manner in which common errors are made. Examples of methods are found throughout, which should aid in the use of the book as a text for store classes in salesmanship.

Loree, L. F. Railroad Freight Transportation. *New York: Appleton,* 1922. * * *, 771 pp. $5.

In this comprehensive analysis of the subject, Mr. Loree discusses various phases of railroad management including distribution of cars, movement of engines and trains, the handling of men, the features of permanent way and shop plant, the organization through which they are controlled, and the accounting made of their activities. The work is extremely detailed, and the point of view throughout is that of the man actually concerned with the forwarding of freight.

McVey, Frank L. Modern Industrialism. *New York: Appleton, 1923.* 358 pp. 2d edition. $2.50.

In this revision of the 1904 edition the author's conclusions concerning industrial progress are substantially the same in spite of the important changes of the past two decades. "The world needs sound government, clarity of view and ethical purpose as much as ever." But, in addition, the international aspects of modern industrialism are shown to be demanding serious consideration. The five chapters of the first section furnish historical background of the industrial development of England, Germany, America, and the Orient. Part II illustrates its central theme, "industry is complicated," by descriptions of the extractive industries, transportation, manufacturing, forms of organization, commercial institutions and taxation. In Part III government and industry are brought in contact and their relationship analyzed. The final chapter coordinates and summarizes the points raised in those preceding.

Rorty, M. C. Some Problems in Current Economics. *Chicago: A. W. Shaw Co., 1922.* 143 pp. $1.25.

"Some Problems in Current Economics" is designed as an introductory reading in economics for the business man. Mr. Rorty devotes chapters to Industrial History, Social and Industrial Organization, Production and Distribution and discusses present-day economic trends. The author, speaking from a background of thirty years' experience as an engineer and executive, has endeavored to present facts rather than opinions and offers the reader statistical evidence wherever possible.

Rosenthal, M. S. Technical Procedure in Exporting and Importing. *New York: McGraw-Hill, 1922.* 312 pp. $3.

The author attempts to show the technical procedure and mechanics of exporting from and importing into the United States. Examples of actual shipments are occasionally included to show specific practices in use at present. Sales contracts, bills of lading, invoices, the tariff system of the United States, foreign government regulations, theft, marine insurance, and financial documents are among the topics discussed.

Russell, F. A. The Management of the Sales Organization. *New York: McGraw-Hill, 1922.* 227 pp. $3.

This work treats only the personal aspect of sales administration. A consideration of human relations forms the basis for a study of the selection of salesmen, their training, equipment, routing, and compensation. Attention is directed to the promotion of sales efficiency through carefully planned contacts between the sales manager and the salesmen. The author has planned the book for use by college classes as well as by members of sales organizations.